

IN THE
TEMPERATE REGIONS



OR
NATURE & NATURAL HISTORY
IN THE TEMPERATE ZONES

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EAGLE AND FISH-HAWK.

IN THE
TEMPERATE REGIONS;

OR,

NATURE AND NATURAL HISTORY IN THE
TEMPERATE ZONES.

With Anecdotes and Stories of Adventure and Travel.



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IN THE

TEMPERATE REGIONS.

CHAPTER I.

GENERAL SURVEY.

BY the Temperate Regions we mean all those portions of the globe which are included in the northern hemisphere between the Arctic Circle and the Tropic of Cancer ; in the southern, between the Tropic of Capricorn and the Antarctic Circle. These are characterized by a climate which, though subject to considerable variations, is, on the whole, free from the excessive cold of the Frigid and the excessive heat of the Torrid Zones. The soil is more uniformly fertile, but the vegetation less exuberant, than in the Tropics. In the Temperate Regions man seems to attain his highest development, and the world's civilization has found in them its cradle and the sphere of its greatest activity. The nations and races which stand foremost in the world's history all live and rule within the Temperate

Zone; and art and science have here accomplished their greatest triumphs.

The breadth of each of the Temperate Zones is 645 miles; or, altogether, the Temperate Regions of the earth occupy a breadth of 1290 miles.

They present, therefore, some startling contrasts. Between the richly-cultivated lands of Europe and those of Asia lies a vast extent of dreary plain—the steppes of Russia and Tartary. The forest-country of North America opens out on the rolling prairies, which sweep westward for leagues and leagues, unrelieved by a single tree; the great mountain-masses of South America slope downwards into the grassy levels of the pampas and the llanos. It is impossible to offer any concise description of the Temperate World, for its various sections differ so widely from one another. We shall, therefore, proceed to consider them in detail, commenting briefly on their scenery and vegetation as introductory to our notices of their chief forms of animal life.

CHAPTER II.

THE PRAIRIES AND FORESTS OF NORTH AMERICA.

THE PRAIRIES.



NORTH AMERICA, between the Rocky and Alleghany Mountains, and from the shores of the Arctic Ocean on the north to those of the Mexican Sea on the south, may be described as consisting of one immense plain, broken up by the valleys or basins of the Mississippi and Missouri, the Red River, the Columbia, the St. Lawrence, and the Mackenzie rivers. Its total area is nearly 8,300,000 square miles ; its length, fully 3000 miles.

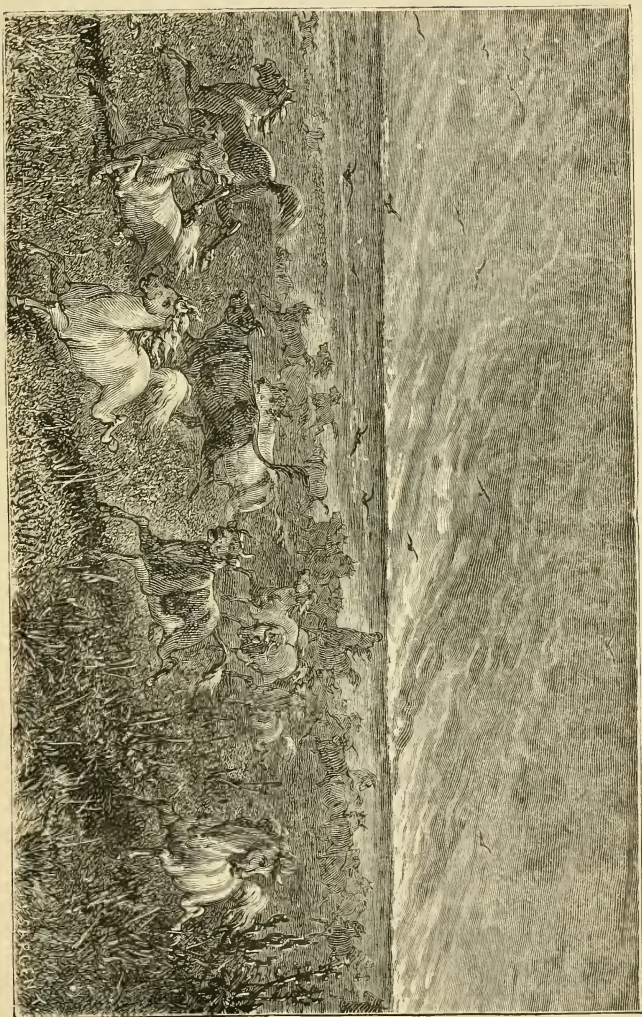
The most characteristic feature of this region is its Prairies.

Miles upon miles of rolling meadow-land ; sometimes as level as the fenny pastures of Lincolnshire ; always as boundless, apparently, as the sea, richly clothed with long thick grass of a tender green, and lighted up by flowers of the liliaceous kind, which scent the air with perfume,—such are the prairies. Here and there, in the north, the monotony is relieved by clumps of oak and black walnut ; or, in the south, by groups of tulip, cotton, and magnolia

trees. Occasionally, the traveller comes upon a shady hollow, watered by pool or stream, where the slopes bloom with shining masses of azaleas, kalmias, rhododendrons, and andromedas. The silence would be oppressive but for the sighing of the wind, or the low howl of the cayote, or the whirr of passing birds; and the solitude would be unbroken but for the appearance of herds of deer, bison, and wild horses. At times, in the remote distance, the prairie wolves prowl to and fro in quest of prey; but the general impression which the scene produces is that of a lonely and abandoned world. Nor will that impression be swept aside for many generations yet to come, though civilization is gradually encroaching on the wilderness, and the locomotive strikes across the tremendous plain on its way from Omaha to San Francisco.

Prairies, resembling these in their general features, lie to the east and west in Arizona, Texas, California, and some of the Mexican provinces. The vegetation differs, however, according to the peculiar conditions of each region, and the alternations of rainy deluges and periodical droughts become more marked as we journey southward. The herbage, in the long warm summer, often grows so dry that the slightest accident—such as a lighted match flung carelessly away, or the smouldering ashes dropped from a hunter's pipe—will kindle the most terrible conflagrations; and the unchecked flames, spreading devouringly over wide spaces of open ground, consume trees and shrubs, and burn to death the cattle or wild animals unable to effect their escape. With the crackling, hissing, seeth-

PRAIRIE ON FIRE.



ing noises of the fire mingle the groans of the perishing beasts ; while vast columns of smoke roll before the wind, like the billows of a storm-tossed sea, and the prevailing gloom of the scene is fitfully illuminated by live tongues of flame. These "prairie fires" are sometimes kindled in revenge by the Indians ; and sometimes the settlers adopt this summary but dangerous mode of clearing the encumbered ground. At all times the spectacle is one of dreadful magnificence, reminding the traveller of some of the lurid pictures in Dante's "Inferno."

THE FORESTS.

To the east of the Mississippi spreads a "magnificent undulating country," about 300 miles in breadth, and extending 1000 miles from north to south between the "Father of Waters" and the Alleghany Mountains. This immense tract is still, to a great extent, profusely wooded. When America was first colonized, it formed one uninterrupted forest, spreading from the Gulf of St. Lawrence and the Canadian Lakes to the Gulf of Mexico, and from the Atlantic Ocean across the Alleghanies to the valley of the Mississippi on the north, and still farther to the westward in the south. This ocean of vegetation occupied an area of 1,000,000 square miles, and the agriculturist as yet has done but little to limit it.

The cultivator has done much to open up the forests of Tennessee and Kentucky ; but the noble Ohio still rolls its waters for hundreds of miles in the green gloom of stately trees, while its banks bloom with a rich growth of azaleas, rhododendrons, and other shrubs, intertangled by

beautiful creeping plants. It is in the Ohio valley that we see the full splendour of the American forests ; so absolutely different from those of the Amazons, or the Tropical wildernesses of Borneo and Java ; yet in their own way by no means inferior, and perhaps excelling them in variety and freshness. There may be seen the gigantic deciduous cypress ; the tall tulip-tree with its wealth of flowers ; several species of noble oaks ; the black walnut, the American plane, the sugar-maple, magnolia, and hickory.

The Dominion of Canada contains millions of acres of fertile soil, covered with mighty forests. "Upper Canada," says a writer, "is the most fertile, and in many respects is one of the most valuable, of the British colonies in the west : every European grain, and every plant that requires a hot summer and can endure a cold winter, thrive there. The forest consists chiefly of black and white spruce, the Weymouth and other pines—trees which do not admit of undergrowth ; they grow to a great height, like bare spars, with a tufted crown casting a deep gloom below. The fall of large trees from age is a common occurrence, and not without danger, as it often causes the destruction of those adjacent ; and an ice-storm is awful."

When a heavy fall of snow has taken place, succeeded by rain and a partial thaw, the trees and all their branches are quickly crusted with glittering ice ; oak and pine bend beneath the burden, and the icicles pendent from every bough drop in radiant showers at the lightest breath of wind. The hemlock-spruce, with its long drooping branches,

assumes the appearance of a solid icy pyramid. In the freshening breeze the tall trees swing heavily to and fro, while the feebler ones are bowed and bent, like corn beneath the fury of the tempest. At length the forest can no longer support its load, and tree after tree gives way, crashing to the ground with dreadful violence, and with a roar that sounds in the distance like a peal of artillery.

But on a calm day, when the sun shines in a cloudless heaven, nothing is more beautiful or brilliant than the aspect of the forest, which seems loaded with the most dazzling gems, and reflects the sunbeams in a myriad of prismatic colours.

As we have said, the character of the North American forest is wholly unlike that of the Tropical wilderness of trees and parasites, arborescent ferns, and epiphytous plants. They are less luxuriant, but more majestic. In the virgin forest we see the prodigality of Nature; in the American woods its dignity:—

“The murmuring pines and the hemlocks,
Bearded with moss, and in garments green, indistinct in the twilight,
Stand like Druids of eld, with voices sad and prophetic,—
Stand like harpers hoar, with beards that rest on their bosoms.

We cannot do better than quote the graphic description of the ancient American forest which occurs in Viscount Milton and Dr. Cheadle's "North-West Passage by Land." As they justly observe, no one who has not seen a primeval forest, where trees of gigantic size have grown and fallen undisturbed for ages, can form any idea of the collection of timber, or the impenetrable character of such a region.

There were pines and thujas of every size ; the patriarchs of 300 feet in height standing alone, or thickly-clustering groups of young ones struggling for the vacant place of some prostrate giant. The fallen trees lay heaped around, so as often to rise on every side in barriers six or seven feet high. Trunks of huge cedars, moss-grown and decayed, lay half-buried in the ground on which others as mighty had but recently fallen ; trees still green and vigorous, and only just blown down, blocking the view with the masses of earth still held in their matted roots ; trunks dead, trunks rotten, trunks living ; trunks dry and barkless, and trunks still moist and green with moss ; bare trunks, and trunks throwing out innumerable boughs and branches ; trunks prostrate, reclining, horizontal, and propped up at different angles ; timber of every size, in every stage of growth and decay, in every possible position, entangled in every possible combination. The swampy ground was densely covered with American dog-wood ; and elsewhere with thickets of the araba, a tough-stemmed trailer, with leaves as large as those of the rhubarb plant, and growing in many places as high as a man's shoulders. Both stem and leaves are covered with sharp spines, which pierce your clothes as you force your way through the tangled growth, and make the legs and hands of the pioneers scarlet from the inflammation of myriads of punctures.

ANIMAL LIFE IN THE FORESTS AND PRAIRIES.

The preceding sketch, brief as it is, will have prepared the reader to learn that North America is rich only in

certain forms of animal life. He will expect, and will be right in his expectation, to find that the carnivores are comparatively few, and that the herbivorous and insectivorous tribes abound. Throughout the vast region we have described beasts of prey are almost unknown; there are neither lions nor tigers, panthers, hyenas, nor leopards. The most formidable—indeed the only formidable—quadruped, is the Grizzly Bear; the significantly named *Ursus ferox*.

The “Grizzly,” as the American hunters familiarly call him, is found throughout the solitudes which comprise the Rocky Mountains and the plains eastward of them to latitude 61°. In size he is gigantic, frequently weighing eight hundred pounds, and measuring eight feet and a half to nine and even ten feet in length. He is armed with long and strong claws, which cut like a chisel when he strikes a blow with them. His tail is almost rudimentary. His strength may be estimated from the fact that the animal has been known to drag easily, for a considerable distance, the carcass of a bison weighing one thousand pounds. It is recorded that a veteran hunter, having slain a very large bison, and marked the spot, left the body for the purpose of obtaining assistance to skin and cut it up. On his return no bison was visible! He was at a loss to account for its disappearance, but after a long search discovered it in a deep pit, which had been dug for it by a felonious “grizzly.” The bear had carried it off, and “interred” it during the hunter’s absence.

Grizzly’s audacity is equal to his strength, as the following incident, related by Sir John Richardson, will show.

A party of voyageurs, who had been employed all day in working a canoe up the rapids of the Saskatchewan, had seated themselves in the twilight by a fire, and were busily preparing their supper, when a large grizzly bear sprang over their canoe, which they had tilted behind them as a



GRIZZLY AND BLACK BEARS.

protection against the wind, and seizing one of the party by the shoulder, carried him off. The rest fled in terror, with the exception of a half-blood, named Bourasse, who grasped his gun, and pursued the bear as it retreated leisurely with its prey. He called to his unfortunate comrade that he was afraid of hitting him if he fired at the bear; but the man besought him to fire immediately, as he was being squeezed to death. Whereupon Bourasse

took a steady aim and discharged his rifle into the body of the bear, which instantly dropped its prey to follow this new antagonist. The latter, however, escaped, though with some difficulty; and the bear retreated into the dense coppice, where it is supposed to have died.

Sir John Richardson also speaks of a bear springing out of a thicket, and with one blow of his paw completely scalping a man; laying bare the skull, and bringing the skin down over the eyes. As help was at hand, the bear made off without doing the poor fellow further injury; but the scalp not being replaced, he lost his sight, though the eyes, it is said, were uninjured.

The grizzly, it should be observed, does not hug; he kills his prey with a blow from his formidable paw. When he first catches sight of an unusual object, he rears himself on his hind legs, and gazes at it intently for some minutes. Then he rushes straight at it, whether it be man or beast; and being absolutely indifferent to numbers, will seize it "in the midst of a regiment of soldiers." The only thing that appears to daunt him is the *smell* of man; and if in his hot charge he crosses the human scent, he will at once turn and flee.

It is stated, on the authority of an experienced hunter, that this bear possesses the power of moving his claws independently. For instance, he will take up a clod of earth which has excited his curiosity, and crumble it into dust by moving his claws one on the other.

Wolves, however hungry, will not touch a carcass which has been buried by a grizzly bear, though they will greedily devour all other dead bodies. It is asserted that the

instinct of burying bodies is so strong with these bears, that they will cover hunters who fall into their power and feign death, with grass, and bark, and leaves. If the men attempt to move, they will put them down again and cover them as before, finally leaving them comparatively uninjured.

When winter approaches, the grizzly retires to his cave, where he lies during the cold season in a torpid condition. A bold and experienced hunter will sometimes take advantage of this circumstance. Having scrutinized the approach to the cave, he prepares a candle made of wax from the comb of wild bees, softened with bear-grease. The wick is large, and it burns with a strong flame. Carrying this before him, with his rifle slung to his side, he penetrates into the recess of the cave, when he fixes the candle on the ground, and ignites it. The cavern is soon vividly illuminated. Then the hunter lies down on his face, with the candle between the bear and himself; and in this position, with the muzzle of his rifle full in front of him, he bides his time. Grizzly is soon roused by the light; he yawns; he stretches himself, like a person wakened from a profound slumber. The hunter cocks his rifle, and watches the bear turn his head, and with slow and waddling steps approach the candle. This, says our authority, is a trying moment; for the grizzly is so tenacious of life that a sure aim is essential. He reaches the candle, and as he raises his paw to strike it, the hunter fires; and with a heavy thud the bear falls to the ground, pierced through the eye or the heart.

The Black Bear is found farther north than the grizzly,

and is a less formidable opponent, though by no means to be treated with contempt. He is characteristically curious, and the traveller frequently finds himself inconvenienced by the instinct which induces the creature to pry into everything strange or novel. Numerous anecdotes of this bear, of his curiosity, his boldness, and his shrewdness, are scattered through the writings of American explorers. Captain M'Clintock writes :—"Shortly after pitching our tents, a bear was seen approaching. The guns were prepared, men called in, and perfect silence maintained in our little camp. The animal approached rapidly from to leeward, taking advantage of every hummock to cover his advance, until within seventy yards ; then, putting himself in a sitting posture, he pushed forward with his hinder legs, steadying his body with his fore legs outstretched. In this manner he advanced for about ten yards further ; stopped a minute or two, intently eying our encampment, and sniffing the air in evident doubt. Then he commenced a retrograde movement by pushing himself backward with his fore legs, as he had previously advanced with the hinder ones. As soon as he presented his shoulder to us Mr. Bradford and I fired, breaking a leg and otherwise wounding him severely ; but it was not until he had got three hundred yards off, and received six bullets, that we succeeded in killing him."

The black bear almost invariably hibernates. Selecting a retired spot, under a fallen tree, he scratches away a portion of the soil, and having ensconced his body in the hollow thus made, is soon provided by the snow with a close warm covering. He is hunted on account of his

skin, which at one time fetched a high price in the market. His chief food is of a vegetable nature—grain, fruits, and roots; but he does not object to an occasional meal of pork. He commits extensive depredations on the maize-fields, and is exceedingly partial to honey. Such being his usual diet, we need not wonder that his flesh is exceedingly succulent, and much relished by the Canadian settlers.

We cannot speak of the prairies without calling to mind the Bison, which reigns over them as undisputed lord. He traverses their entire extent from north to south. According to some naturalists, he is but a variety of the aurochs, the fierce wild bull which formerly inhabited the forests of Gaul, Germany, and Sarmatia, and is still found, though in vastly diminished numbers, in the densely-wooded solitudes of Lithuania. Herds of aurochs, under the special protection of the Czar, who reserves them as game for imperial and royal hunters, still roam in the remotest recesses of the great Lithuanian forest of Bielowicza. They are believed to muster about eight hundred strong.

The American Bison, or Buffalo, ranges as far as the Great Martin Lake, in lat. 63°, while it congregates in countless thousands on the rolling prairies between the Rocky Mountains and the Mississippi. Their flesh supplies the chief provision of several Indian tribes, who hunt them on horseback, and kill them with bow and arrow, spear, and rifle. The chase is full of excitement, and offers a singular attraction to the bold and restless spirits of the New World. It is exciting because dangerous; for, when



BISONS.

hotly pressed, the buffalo will turn on its pursuer, and its great strength renders it a formidable antagonist.

The bison meets with an active and relentless enemy in the white wolf. Hunting in packs of one to two hundred, these gaunt and bloodthirsty animals fling themselves upon two or three wandering bisons, which have separated by accident or intention from the herd, and surrounding them, worry the huge beasts to death. They have never the daring, however, to attack a herd; though the latter, if they catch sight of the wolfish pack, however distant, immediately exhibit a panic-terror, and form into a kind of battle-array. The wily Indian hunter knows how to profit by this instinctive dread. He assumes the skin of a wolf, and with bow and arrows in his hand courageously confronts the herd, crawling slowly on his hands and knees. The terrified buffaloes huddle together in a confused mass to encounter their traditional enemy, when, on arriving within a convenient range, the Indian suddenly starts to his feet, and utters a wild and "eldritch scream." In the frenzy of fear which this occasions, he is enabled to select and bring down several victims, while the remainder of the herd gallop away madly, as if pursued by the Furies.

The Indians also capture considerable numbers by setting fire to the prairie grass; the flames drive the buffaloes to a central point, where they are easily surrounded and slaughtered. Or they seek some means of goading them into one of their strange excesses of terror, when, if driven towards a precipice, they will dash themselves headlong over the brink, falling crushed and bleeding into the chasm beneath.



INDIAN STRATAGEM IN HUNTING BISONS.

They are so continuously hunted, however, both by the Indians and the cayutes, that it is growing more and more difficult to circumvent them. Each animal of the herd divines the approach of danger with a truly marvellous instinct. With ears erect, and nostrils to the wind, they gather round the bigger members of the herd, which are necessarily the oldest and most experienced, and at the slightest signal gallop away at a speed which almost defies pursuit.

In spite of the immense destruction, says a recent writer, which the Indian pioneers and trappers annually work among the innumerable herds which animate the mono-

tonous landscape of the prairies, many years must pass before the race will disappear from the North American continent.

Spite of the many enemies who, in so many ways, compass their slaughter, the bisons still pasture in thousands upon the grassy plains and ridges of the green Far West.

Yet it seems much to be desired that the American Government should find some means of preventing the extermination of these noble quadrupeds, which are so great an ornament of the rolling prairies, and so valuable a source of supply to the traveller or explorer bound for Santa Fé or California. The reader may form some idea of the numbers annually killed, from the fact that every year upwards of nine hundred thousand hides are sold in Canada and the United States. These hides are all the spoil of female buffaloes, the skin of the male being too thick and coarse to be easily tanned.

The Indians, who derive their subsistence almost entirely from the sale of these hides, preserve, however, a certain quantity for their own use, employing them in the construction of their tents, beds, canoes, and domestic utensils. It should be added, in concluding the statistics of this systematic destruction, that the caravans which still cross the prairies—comparatively few since the completion of the great Pacific Railway—seem to find a pleasure in strewing their route with the carcasses of bisons. Lastly, it is the mission of eagles of all sizes, of the buzzards and the vultures, to whiten the skeletons of the bovine race, which in certain of the defiles and passes to the west of the Rocky

Mountains are so thickly accumulated that the region has been appropriately called the "cemetery of the buffaloes."

Among the most predatory and ferocious of the North American animals is the Cayeute, or Prairie Wolf, and the hunters consider an encounter with it as not less adventurous and full of risk than with a jaguar or a grizzly bear.

Wolves are more numerous in the New World than in the Old. Everywhere along the borders of the mighty western wildernesses, as well as in the recently cultivated districts, in the neighbourhood of outlying villages and farms, on the prairies or in the woods, the wolf bursts upon the traveller with foaming jaws and cruel eyes, and a hoarse deep howl which seems to indicate the mingled cowardice and audacity of its nature.

The cayeute is too wary to be easily ensnared or trapped, and is generally hunted with dogs and horses. His skin is of a dingy red colour, in which some gray and white hairs mingle. Such, at least, is the prevailing hue; but there are numerous variations, as in all other animals. The bushy tail, tipped with black, is as long, or nearly as long, as one-third of the animal's entire length. A striking resemblance may be traced between him and the Indian dogs; in fact, there can be no doubt that both descend from the same stock. His habitat is the region between the Mississippi and the Pacific, as far south as Mexico. Like jackals, he hunts in troops, pursuing goats and bisons, and such other animals as he can circumvent or overpower. He does not attack a *herd* of bisons, but follows it in

numerous bands until some straggler separates from the main body, when he surrounds the prey, and quickly kills and devours it. So, too, he will accompany hunting-parties and the caravans of travellers, taking possession of the camps which they abandon, and falling eagerly on the refuse of the morning or evening meal. Sometimes he will stealthily glide into the encampment at night, and seize the rations set aside by the emigrants or adventurers for the morrow's breakfast.

As the cayentes are the most numerous of the American carnivores, they frequently suffer from famine. When close pressed by hunger, they will feed upon roots, fruits, vegetables, or anything else which can satisfy a raging appetite.

Another American carnivore to which the reader's attention may be directed is the Jaguar. It occurs in the United States, and is intermediate in size between the leopard and the tiger. The skin is of a reddish white, and covered from the neck to the extremity of the tail with dull brown oval spots, ringed with black.

The jaguar prowls to and fro in the shades of night, seeking whom he may devour. His gait is slow, but as he takes a long, firm stride, he succeeds in covering a considerable space of ground between sunrise and sunset. If the country abound in game, he quickly finds a supper! One or two tremendous leaps will place in his claws a victim, on which he will banquet leisurely and with well-bred discretion. But when the way is rendered almost impassable by the snow-drifts, or by the fury of the storm, he

seeks the covert afforded by some projecting rock, in a district frequented by stags or the smaller mammals, and tolerably well wooded. There he waits patiently for the passing deer, whose habits he seems to know by instinct, or for the turkeys which scrape and scratch at the foot of the trees, or the hares whose burrows honeycomb the sandy soil ; never missing a favourable opportunity, and, with the swiftness and directness of an arrow, springing on his prey.

Wild Cats are still very numerous in the Southern States of America ; at least in Louisiana and North and South Carolina. They find breeding-places and feeding-grounds among the marshes and the marshy brushwood which cover the banks of the Mississippi, and the thick forests so frequently flooded by the waters of its tributaries.

It is said that the Americans regard the hunt of these predatory animals as one of the liveliest of their national sports. What a fox-hunt is to an English squire, that, and even more, is a wild cat-hunt to the Southern planter. The character given to it by the negroes is certainly not undeserved :—A vermin as voracious as a pawnbroker, as stingy as a briefless lawyer, as wild as a peccary, and as insensible to pain as a Southern planter or a turtle. Finally, they say, it is like a woman, because you cannot compare it with any other than itself !

M. Révoil says that, on first examining the head of a wild cat, he was much struck by its close resemblance to that of a rattlesnake ; it had the same cruel expression, the same jaws, the same structure of the teeth. He made this

comparison, he says, all the more easily, because one of the negroes who accompanied him in his hunting expedition had killed a rattlesnake, and was carrying it on a carob branch in triumph.

To the same writer we owe the following anecdote :—

“One morning, in South Carolina, on the borders of that immense marsh called the Great Dismal Swamp, I had strayed from the hunt, followed by my dog Black. I endeavoured to retrace my route, and was returning towards the house where I spent my holidays, when, on doubling a projecting rock, my dog suddenly started back with bristling hair and tail between his legs, and howling hoarsely to attract my attention. I looked before me, and could not repress a cry of horror.

“About forty paces distant a wild cat and a rattlesnake were defying each other to the combat; their eyes shot forth flame and fire; one hissed, the other mewed. The serpent moved in folds, marked by grace and suppleness; the cat, arching his back, appeared to wait for an opportunity of pouncing upon his enemy. Suddenly the serpent made a spring, but the cat anticipated it, and leaped aside; as he returned to the attack, the rattlesnake bit him in the lip, and though immediately caught in the wild cat’s claws, succeeded in twisting its coils round his body, and violently compressing him. I put an end to the agony of both; my two barrels stretched them on the ground, dead, and incapable thenceforth of doing any injury.”

Leaving the carnivores, we come to the rodents; among which the Prairie Dogs deserve especial notice.

As Mr. Murray remarks, it is difficult to say *why* they have received so absurd an appellation, for they do not bear the slightest resemblance to the canine species either in structure or habits. In size they vary greatly, but on the average they are not larger than a squirrel ; nor are



PRAIRIE DOGS.

they unlike one in appearance, except that they lack the bushy tail. They burrow under the light soil, and throw it up round the entrance, like our English rabbit ; and on this little mound they generally sit, chirping and chattering to one another, like gossips in a village. Their number is

incredible, and their cities—for such their aggregate dwelling-places may well be called—are full of life and activity. "I do not know," says Mr. Murray, "what their occupations actually are; but I have seen them constantly running from one hole to another, although they never pay any distant visits. They seem, on the approach of danger, always to retire to their own houses; but their great delight apparently consists in braving it, with the usual insolence of cowardice when secure from punishment: for, as you approach, they wag their little tails, elevate their heads, and chatter at you like a monkey, louder and louder the nearer you come; but no sooner is the hand raised to any missile, whether gun, arrow, stick, or stone, than they pop into the hole with a rapidity equalled only by that sudden disappearance of Punch with which, when a child, I have been so much delighted in the streets and squares of London."

The same traveller goes on to observe, that as there is generally neither rain nor dew on the plains which they inhabit, during the summer, while, on the other hand, these little creatures never wander far from their "towns," it seems reasonable to conclude they need no other liquid than they can extract from the grass they eat. It would appear that they pass the winter in a torpid and lethargic condition, for they accumulate no supply of provisions against that season; while the herbage on which they feed dries up in autumn, and soon afterwards the frosts render it inaccessible to them. When the prairie dog feels the approach of his time of somnolence—generally about the end of October—he closes all the passages of his dormitory

to protect himself from the cold, and abandons himself to what we may suppose to be the pleasures of a prolonged rest. He remains in his subterranean retirement until aroused by the genial airs of spring, when he throws open his doors, and reappears in the "outside world" in all his original liveliness and gaiety.

An American traveller furnishes a picturesque account of "a village of prairie dogs" (or marmots) :—

I know not, he says, whether the instinct of the marmots had been awakened by the sound of our footsteps, but on our approach their sentinels gave the alarm, and decamped towards the nearest openings to seek shelter with their comrades. The latter, warily maintaining their position at the mouth of their burrows, filled the air with a peculiar yelping; and then, after engaging in some fantastic capers, disappeared each into his respective abode.

The "village of prairie dogs" before my eyes occupied an area of about twenty acres. Everywhere the ground was mined, and opened up, and covered with hard conical masses which bore witness to the assiduous subterranean labour of these rodents. I sounded the depth of several of the holes with my ramrod; but they ran into such intricacies that I could not reach a single inhabitant.

There was but one resource left, if I wished to secure a full and undisturbed view of the marmots; namely, to conceal myself, and wait patiently until their mistrust had given place to confidence. Nature favoured my purpose; for on the borders of the "village," and in a hollow of the valley, grew a clump of dwarf cedars, the tufted

branches of which were well adapted to hide me from the keenest eyes, and to enable me to see without being seen.

With as little noise as possible, therefore, I retreated, and having chosen my position, stood motionless and silent, with my eyes fixed on the "village," the gates and windows of which, though wide open, exhibited no signs of life.

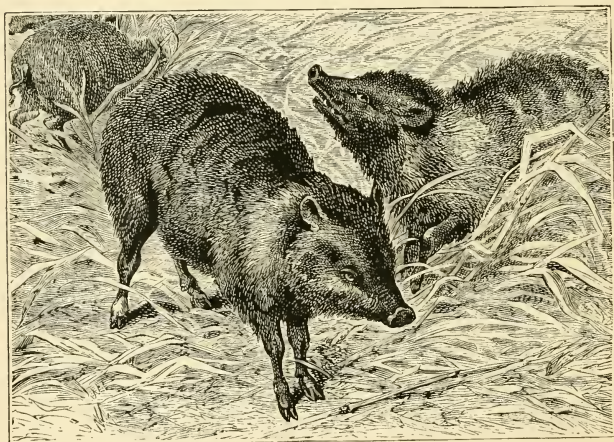
After a while, a few astute old fellows cautiously thrust forth the tip of their nose at the mouth of one of the galleries, and then immediately vanished. Others made a rapid run outside, but only to rush from one opening to another.

At length, some of the marmots, reassured by the tranquillity which prevailed around, and the absolute silence, came to the conclusion that all danger was past, and issued from their dens. Somewhat hastily they crossed a space tolerably distant from the hole whence they had emerged, and entered another burrow. It was impossible to resist the idea that they were bound on a visit to some friend or relative, in order to relate the alarm they had experienced, and to discuss with him its probable cause; to exchange, in a word, their mutual impressions, and compare observations on the strange appearances which had passed before their eyes.

Other marmots, of greater audacity, collected in small groups in the middle of the streets, and their "conversation" probably turned on the recent invasion of the republic, as well as upon the best means of defence. Sometimes an orator sprang upon the summit of a hillock which commanded the whole assemblage, and thence explained

his views and his principles of strategy. Sometimes, seized with a sudden apprehension, the whole crowd dashed headlong into the various burrows, and vanished quickly, to reappear at a considerable distance, and resume the same devices. It was very curious to observe the braggart ways of these marmots; they seemed as if they would, Salmones-like, defy the thunder, but they fled at the lightest whisper of the breeze!

To the American forests belongs the Peccary, a member of the great Suidæ or Hog family; measuring about twenty



PECCARIES.

to twenty-four inches in height, and from three to three and a half feet in length.

The peccary is a gregarious animal, living in herds of from ten to fifty in number. His jaws are armed with

formidable tusks ; but these are straight, instead of being curved as in the wild boar. They average four to five inches in length, and prove very dangerous weapons of offence or defence. Though somewhat awkward in appearance, like all of his tribe, his movements are exceedingly rapid ; and the strength of his head, neck, and shoulders is such that few things can withstand his impetuous onset.

The hunter knows from experience that the peccary never hesitates to charge at any object or animal that comes in his way, and that, therefore, when overtaken by one, his only resource is flight. As he habitually rushes headlong on whatever interrupts his progress, and will fight until he dies, it is useless to make head against him ; the wounds suffered in the contest take away all the pleasure of victory ! He must be hunted with skill and caution, and brought down by a rifle-bullet from some convenient covert.

The peccary feeds on berries, acorns, roots, sugar-canes, seeds, and on the smaller reptiles, making his den in the midst of the tufted and luxuriant cane-bushes which, in marshy localities, grow round the tall and ancient trees. The wind and the lightning seem to attack in preference the isolated oaks and maples, the giants of the Texan forests, and they are frequently to be seen lying prone on the river-bank, and overgrown with a profuse net-work of lianas and wild vines. The trunks of these trees, which ordinarily measure twenty-five to thirty feet in girth, are generally hollow, and furnish the peccaries with a nocturnal asylum. They retire every evening into a trunk capacious enough to hold twenty or thirty of them, and there they

lie huddled together, the snout of one resting on the hind-quarters of another, and the last-comer keeping guard.

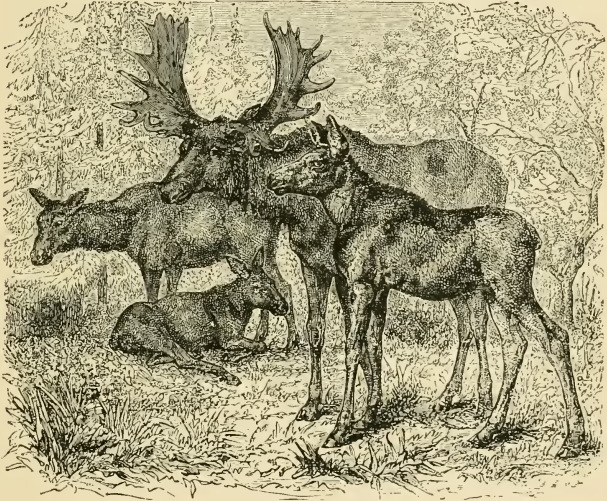
The readers of Longfellow's poem of "Hiawatha" will remember the following spirited passage, which is instinct with life and motion :—

" Hidden in the alder bushes,
There he waited till the deer came,
Till he saw two antlers lifted,
Saw two eyes look from the thicket,
Saw two nostrils point to windward,
And a deer came down the pathway
Flecked with leafy light and shadow;
And his heart within him fluttered,
Trembled like the leaves above him,
Like the birch-leaf palpitated,
As the deer came down the pathway.
Then, upon one knee uprising,
Hiawatha aimed an arrow;
Scarce a twig moved with his motion,
Scarce a leaf was stirred or rustled,
But the wary roebuck started,
Stamped with all his hoofs together,
Listened with one foot uplifted,
Leaped as if to meet the arrow;
Ah, the singing, fatal arrow,
Like a wasp it buzzed and stung him."

Notwithstanding the slaughter committed by the white men and the red men,—by the pioneer, the traveller, the hunter, and the trapper,—the plains and woods of America still abound with "game;" and among this game the various members of the Cervidæ, or Deer tribe, hold a high place in the sportsman's estimation. In the north we meet with the Moose, which is identical with the European elk, and is the largest of all the tribe; a noble animal, seven feet in height, with large palmated horns

bent back over the head—horns so heavy that one would think the animal must grow weary of the burden.

Though of a clumsy, awkward gait, he covers the ground with much rapidity, and can maintain his speed for a considerable distance. His trot is long and swinging, and carries him easily over obstacles that a horse cannot pass ;



A MOOSE FAMILY.

and the hunter's best chance of capturing the coveted prize is when the snow lies soft and thick on the ground, as then his body's weight sinks him deeper and deeper at every pace, and he is easily overtaken by the pursuer in his swift snow-shoes and with his lighter frame.

The moose is generally afraid of man, but there are seasons of the year when he seems possessed with a sudden

frenzy, and will attack any living creature that comes across his path. He uses as weapons his horns and fore feet, and with the latter deals such tremendous blows that he can strike a wolf dead on the spot. He swims with ease and swiftness, and in the summer spends much of his time in the water. His skin is remarkable for its thickness, and when manufactured into clothing will defy a pistol-shot or a sword-thrust. His flesh is much valued, either when eaten fresh or smoked like ham. The daintiest portion, however, is said to be the large muzzle, or upper lip.

Still farther north is found the Cariboo, or American Reindeer, which is identical in species with the reindeer of Lapland, but has never been tamed. It lives in herds, from two to three hundred in number, and is hunted chiefly for the sake of its skin. Such is its speed and endurance, however, that its chase is an arduous and exhausting labour.

Proceeding southward, we meet with the Wapiti, or Carolina Stag, which stands about five feet in height at the shoulders, and measures about seven feet nine inches from nose to tail. It is a gregarious animal, but the herds vary in number as widely as those of the cariboo. Like the elephant-herds, they are always under the guidance of some experienced veteran, who appears to rule with "a rod of iron," and exact and obtain unqualified submission. He is no constitutional monarch, but a despot, and his subjects must tremble and obey. How he communicates



A WAPITI FAMILY.

his orders, who shall determine? Yet that he does so cannot be doubted; for the herd will halt, or advance, or wheel to the right or left, or retreat, with an exactness like that of a well-disciplined regiment.

The monarch reigns by virtue of superior strength and courage, and fights his way to his post of dignity, which he holds no longer than he is able to defy competitors. The battles which take place between the males are singularly fierce, and always end in the death of one of the adversaries, sometimes in that of both, who have been found with their branching horns inextricably locked, so that neither could escape. When pursued by the hunter,

and not mortally wounded, the wapiti will turn upon him desperately, and fight to the "bitter end."

Like the moose, he swims well, and is fond of the water. He feeds upon lichens, young shoots of trees, wild vines, and various grasses. His cry is very peculiar, something like the shrill sound of a railway whistle, and audible at the distance of a mile. His flesh is well-flavoured and nutritious; and his skin is much used in the manufacture of belts, thongs, and moccasins. The teeth are worn by the Indians as a personal decoration.

One of the most elegant of the Cervine family is the pretty Carjacou or Virginian Deer.

He is so timid that he will take flight at the appearance of a child; yet so attached to his favourite haunts, that no amount of persecution can drive him from them. If forced to fly one day, he returns to them the next. Like most of his congeners, he swims with great ease; and takes to the water, in warm weather, to disembarass himself of his insect-plagues. Audubon relates the following anecdote:—

"We recollect an occasion when, on sitting down to rest on the margin of the Santee river, we observed a pair of antlers on the surface of the water, near an old tree, not ten steps from us. The half-closed eye of the buck was upon us; we were without a gun, and he was therefore safe from any injury we could inflict upon him. Anxious to observe the cunning he would display, we turned our eyes another way and commenced a careless whistle, as if for our own amusement, walking gradually

towards him in a circuitous route, until we arrived within a few feet of him. He had now sunk so deep in the water that an inch only of his nose, and slight portions of his prongs, were seen above the surface. At length we suddenly directed our eyes towards him and raised our hands, when he rushed to the shore, and dashed through the rattling cane-brake in rapid style."

Like the wapiti, the carjacou engages in furious combats with rival males, and these combats end in mutual slaughter. He feeds upon acorns, mast, chestnuts, buds, and berries; a diet which will account for the fine quality of his flesh. His senses of scent and hearing are very keen. His skin is much valued by the hunter, on account of its pliability.

No one who has heard of American negroes, or of the ballads of American negroes, or who has read the stories of American hunters, can fail to have made acquaintance with the Opossum. He belongs to the order of Marsupials, and is the only pouched animal found outside of the Australian region. The female is furnished with a pouch, like the kangaroo, in which she carries her young; and at the bottom of it are placed the teats from which they derive their nourishment.

On first catching sight of the opossum, you would think him gifted with impenetrable stupidity; but a very short observation convinces you that he is as full of tricks as the most cunning of foxes. One of his favourite devices, when he is surprised by the hunter, and finds escape impossible, is to fall to the ground, apparently lifeless, as if mortally

wounded by his pursuer's gun. If you think him really dead, and turn aside your gaze, or throw him carelessly into your game-bag, he watches for a favourable opportunity, and is off and away when of course you are least prepared. In this stratagem has originated the popular



OPOSSUM.

proverbial phrase in the United States of “playing ’possum,” which is identical in meaning with the English “shamming Abraham,” and the French “faire le mort.” Touch his head ever so lightly—so lightly that the touch would not kill a fly—and he immediately stretches out his limbs with all the rigidity of a corpse: in a word, he

“shams Abraham.” In this situation you may torture him, cut his skin, almost flay him, and he will not move a single muscle. His eyes grow dull and glazed, as if covered with a film, for he has no eyelids to protect his organs of sight. He will allow you even to throw him to your dogs, so complete is his acting, and so consummate his power of deception ; but forget him only for a moment, and he opens his dull, glazed eyes, seizes his opportunity, and turns tail in the most expeditious manner.

In size the opossum equals a small dog, measuring about three and a quarter feet in total length. He feeds upon young rabbits, mice, rats, reptiles of various kinds, insects, eggs, and young birds ; and occasionally he makes a descent upon the poultry-yard, and regales himself with fowl or chicken. In these depredations he displays an astonishing amount of cunning and perseverance.

“Travelling through the woods,” says Audubon, “perhaps on the ground, perhaps aloft from tree to tree, the opossum hears a cock crow, and its heart swells as it remembers the savoury food on which it regaled itself last summer in the neighbouring farmyard. With great care, however, it advances, and at last conceals itself in the very hen-house.

“Honest farmer, why did you kill so many crows last winter ? Ay, and ravens too ? Well, you have had your own way of it ; but now hie to the village and procure a store of ammunition, clean your rusty gun, set your traps, and teach your lazy curs to watch the opossum. There it comes ! The sun is scarcely down, but the appetite of the prowler is here : hear the screams of one of your best chickens that has been seized by him ! The cunning beast

is off with it; and nothing now can be done, unless you stand there to watch the fox or the owl, now exulting in the thought that you have killed their enemy and your own friend—the poor crow. That precious hen, under which you last week placed a dozen eggs or so, is now deprived of them. The opossum, notwithstanding her angry outcries and ruffled feathers, has consumed them one by one. And now look at the poor bird as she moves across your yard. If not mad, she is at least stupid; for she scratches here and there, calling to her chickens all the while.

“All this comes from your shooting crows. Had you been more merciful or more prudent the opossum might have been kept within the woods, where it would have been satisfied with a squirrel or young hare, the eggs of a turkey, or the grapes that so profusely adorn the boughs of our forest-trees. But I talk to you in vain.

“But suppose the farmer has surprised an opossum in the act of killing one of his best fowls. His angry feelings urge him to kill the poor beast, which, conscious of its inability to resist, rolls off like a ball. The more the farmer rages, the more reluctant is the animal to manifest resentment; at last, there it lies—not dead, but exhausted, its jaws open, its tongue extended, its eyes dimmed; and there it would lie until the bottle-fly should come to deposit its eggs, did not its tormentor walk off. ‘Surely,’ says he to himself, ‘the beast must be dead.’ But no, reader, it is only ‘possuming;’ and no sooner has its enemy withdrawn than it gradually gets on its legs, and once more makes for the woods.”

To the depths of the pine-woods belong the fur-bearing animals, which form the staple of so extensive a commerce in the North-Western States and in Canada. These are the silver and cross foxes, the fisher, the marten, the otter, the mink, and the lynx; and, in an inferior degree, the wolverine, the beaver, the ermine, and the musk-rat.

The beaver was formerly very numerous, and its fur was highly prized; but owing to the incessant persecution it has undergone from the hunter and the trapper, it has now become comparatively scarce. At the same time, the substitution of silk for beaver-skin in the manufacture of hats has rendered its fur almost worthless.

Of all furs—with the exception of the sea-otter, which is found only on the Pacific coast—that of the silver fox commands the highest price. Its colour is a beautiful gray; the white hairs, which predominate, being tipped with black, and mixed with others of a glossy jet. The cross foxes—so called from the dark stripe down the back, with a cross over the shoulders, like that on a donkey—vary in every degree, says Lord Milton, between the silver and the common red fox; and the worth of their skins varies in the same ratio.

Next to the best cross foxes we may place the fisher, the marten, and the mink; all these being animals of the polecat tribe. Then comes the otter; and after the otter the ermine, which in the forests of the North-West is exceedingly common, and by the trapper is regarded as a nuisance, because it destroys the baits set for the marten and fisher. The skin of the black bear, which is also occasionally discovered in his winter retreat, has a certain

commercial value. The lynx is by no means uncommon, and is generally caught in snares of hide. When caught, he remains helpless and completely motionless, and is easily killed by the hunter.

According to Lord Milton and Dr. Cheadle, to whom we are indebted for these details, the most numerous of the more valuable fur animals in this region are the marten and the mink; and to the capture of the former of these two—the so-called “sable” of English furriers—the trapper principally directs his efforts. At the beginning of November, when the animals have assumed their winter coat, he equips himself as follows:—Folding his blanket double, he places in it a lump of pemmican (or preserved meat), sufficient for five or six days’ consumption; a tin kettle and cup; and, if he be rich, some steel traps, and a little tea and salt. Tying the blanket at all four corners, he slings it on his back by a band across the chest. Then he takes his gun and a supply of ammunition, his axe, knife, and game-bag, and fastens on his snow-shoes.

Alone he starts into the gloomy woods; alone and silent, for he dares not whistle or sing, lest he should disturb his intended victims. With vigilant glance he notices every mark upon the white surface of the snow; and as soon as he detects the footprints of marten or fisher, unslings his pack, and begins the construction of a “dead fall,” or wooden trap.

Having felled a number of saplings, he divides them into stakes about a yard long, which he drives into the ground so as to form a palisade, in the shape of half an oval cut transversely. Across the entrance to this little

enclosure—which is just long enough to admit about two-thirds of the animal's body, and too narrow to allow of its fairly entering in and turning round—a short log is laid. Next he cuts down a tree of considerable size, strips it of its branches, and lays it so that it may rest upon the log at the entrance in a parallel direction. The bait, which is generally a piece of tough, dried meat, or a piece of a partridge or squirrel, is placed on the point of a short stick. This is projected horizontally into the enclosure; and on the outer end of it rests another short stick, placed perpendicularly, and supporting the large tree laid across the entrance. Finally, the top of the trap is covered in with bark and branches, so that no other means of access to the bait remains than the opening between the propped-up tree and the log beneath. When the bait is seized, the tree falls down upon the thief, and crushes him to death.

The labour required for such a construction would seem to be considerable; but we are told that a skilful trapper will build up forty or fifty traps in a single day. The steel traps resemble the ordinary rat-trap, except that the springs are double, and that it has no teeth. To imprison such animals as the fox, the wolf, or the beaver, it is necessary they should be very powerful, so that it requires all the strength and energy of a strong man to set them. They are carefully concealed in the snow; fragments of meat are scattered all around, and the place smoothed down so as to leave no trace that can awaken the wary animal's suspicion. A chain is attached to the trap, and to the chain a ring, through which a stout stake is passed. When an animal is caught—generally by the leg, as he



WOLF TRAP.

digs in the snow for the hidden bait—he carries off the trap for a short distance, but is soon brought to a stand by the stake getting entangled across the trees or among the fallen timber; and he seldom travels far before being discovered by the trapper.

The great enemy of the American fur-hunter is the Wolverine, or, as he is sometimes called, the Carcajou, or North American Glutton.

This remarkable animal, which in astuteness far surpasses the opossum, is somewhat larger than an English fox, with a long and compactly made body, mounted on exceedingly short but very strong legs. His broad feet are armed with powerful claws, so that he makes a track in the snow as large as the impress of a man's fist. Owing to his hairy coat, and the shape of his head, he very much resembles in appearance a shaggy brown dog.

Lecturers on Natural History, when desirous of illustrating the wonders of animal instinct, generally select the Beaver as one of their examples.

This industrious and ingenious rodent is distinguished by a broad, horizontally-flattened tail, of a nearly oval shape, but slightly convex on its upper surface, and covered with scales. His hind feet are webbed, and with their assistance, using his tail as a rudder, he swims both readily and rapidly. His length, including his tail, may be put



BEAVERS AND THEIR DWELLINGS.

at four feet ; his colour is a deep chestnut ; and his fur is exceedingly smooth, glossy, and fine. He has large strong incisor teeth, well adapted for gnawing solid substances ; and so hard, that the Indians formerly used them for cutting bone, and in the manufacture of their horn-tipped spears.

The ingenuity with which he constructs his "home without hands" has long been a favourite subject of eulogy, and has afforded many a text to moralists and philosophers.

The indispensable condition of the beaver's life, however, is a sufficient supply of water. It is necessary that the stream by which he lives should be one that is always flowing; and, in order to guard against a failure of this provision, his instinct teaches him to erect a kind of reservoir, by building a dam across the water-course. In this way he contrives to maintain the water always at the same, or nearly the same, level.

To understand the skill with which this dam is thrown up, we must watch the little engineer at his patient toil.

Having fixed upon a tree which he thinks suitable for the purpose, he sits upright, and with those strong and large incisors of his cuts a deep groove completely round its trunk. Then he proceeds to widen the groove in proportion to its depth, so that the tree, when this portion of his labour has been completed, closely resembles the narrow or contracted portion of an hour-glass. Next, he examines it with a careful eye, and views it on every side, as if to determine in what direction it should be laid low. Having settled this point, he takes up his position on the contrary or other side, and with two or three powerful bites cuts through the nearly severed trunk, which comes to the ground with a crash.

The beaver's next procedure is to cut it up into three-foot lengths, or thereabouts; and these logs, rounded and pointed, he builds up into a dam, by laying them hori-

zontally, and loading them with stones and earth until they can resist the pressure of the water. A considerable quantity are thus used; and as fast as the water rises, fresh materials are added, being obtained chiefly from the trunks and branches of trees which have been already stripped of their bark.

In places where the stream runs with a slow current, the dam is carried right across the river; but when the waters flow rapidly, a convex shape is given to it, that it may more easily resist their force. Frequently the dam is very large, measuring six to eight hundred feet in length, and ten to twelve feet in thickness. In the wooded districts of America, broad swamps have been formed by the diverted waters of streams dammed up by the beavers.

It is in this way that the beavers keep up the water to the required level: we must now see what use they make of the reservoirs thus formed. They excavate their burrows close to the brink, and communicate with the water by means of underground galleries; one entrance of which opens into the house or "lodge," as it is popularly called, and the other at a sufficient distance below the surface of the stream to prevent it from being closed by the ice. Hence the beaver can always gain access to his stores, and return to his "lodge," without exposing himself to view.

The "lodge" is nearly circular in form, and bears a close resemblance to the dome-shaped snow-huts of the Esquimaux. The average height is three feet, and the diameter six to seven feet; the outline is that of an irregular

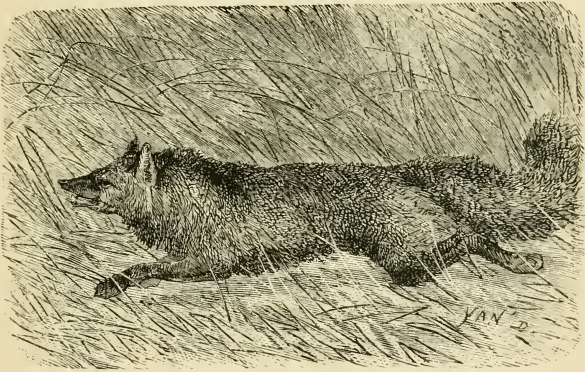
cupola. These are the internal dimensions. Externally they are much greater, on account of the thickness of the walls, which are being continually strengthened with mud and branches, until, in frosty weather, they are as hard as stone. Each "lodge" contains several animals, whose beds are arranged against the inner wall.

No animal, however, can long baffle human ingenuity. The trapper, who pursues the beaver for the sake of his fur, and the peculiar odoriferous secretion called "castor," is more than a match for all his artifices. He is not safe, this unfortunate beaver, even among the frost and snow of winter. Striking the ice smartly, the trapper judges from the sound whether he is near an opening; and as soon as he hits upon one, cuts away the ice, and stops up the opening, to prevent the beavers from escaping into the water. Then he goes ashore, and by repeated soundings follows up the course of the beavers' subterranean gallery, which is sometimes thirty feet long; and by carefully watching the various openings, he generally surprises all the inhabitants. He must be careful, however, that no blood is shed, for the scent immediately alarms the beavers, and they will not return to the "lodge." A curious superstition on the part of the trappers leads them to remove a knee-cap from each captured animal, and throw it into the fire.

Generally the beavers quit their "lodge" in the summer-time, the older males taking to the water, and swimming up and down the stream in bachelor-like liberty, until the month of August, when they resume a domesticated life. Others there are, called "paresseux" or "idlers" by the

trappers, which do not live in houses, and construct no dam, but inhabit subterranean tunnels like those of the common water-rat. These are always males—gay young bachelors, who disregard the dignities of a respectable and laborious career.

Something must be said about a well-known American carnivore, the Raccoon, which may also be classed among fur-bearing animals.



RACCOON.

The racoon is related to the Bear family, and both in appearance and habits has a decidedly ursine character. But it is much more lively, spirited, and active; to say nothing of its gentler disposition. The appetite of the racoon is omnivorous, and it seems able and willing to digest anything,—bats, birds, mice, oysters, crabs, shrimps, nuts, seeds, berries, and fruits. It is a nocturnal animal, and passes the day, sound asleep, with its head between

its hinder limbs, and its body coiled up so as to gain all the warmth possible from its own fur.

To water it is exceedingly partial, drinking freely, and immersing its food, so as to moisten it thoroughly. Hence the Germans call it the *Wasch-Bär*, or Washing-Bear. When tamed, however, it shows just as strong a liking for fermented liquors.

A negro's story of a racoon will illustrate some of his peculiarities and propensities :—

“The racoon is as intelligent as a monkey, and very easily tamed. Some three years ago I brought up one, which played with me like a little dog, clambered on my knees, and thrust his head into my waistcoat pockets to see if they contained a tit-bit for him. I was always very careful to keep the door of the poultry-yard shut, or the little rascal would have stolen my eggs ; for, d'ye see, massa, it is his instinct to plunder the nests of the quail, the partridge, and all other kinds of birds. No quadruped is more cunning in discovering the trees where the nests are built. One day, when my racoon had left the house, I found him on the tall poplar-tree which stands at the end of the lawn. The rascal, with the help of his paws, had extracted from a hole in the trunk some young woodpeckers, and greedily devoured them, while the distracted mother was hovering above his head. He showed a keen appetite also for fresh-water mussels, and was an adept in hunting for them in the mud. Tortoise eggs he regarded as a singular treat ; and his instinct for tracing up the creature's humid track was something wonderful. Once,—O massa ! see what an intelligent vermin he is !—I found

him lying flat on his belly close to the edge of a pond, near which he and I had passed in our wanderings on the previous day : he had concealed himself in a heap of reeds, and seemed to sleep like a marmot. A flock of wild ducks floated upon the water, and approached the shore without any mistrust. Suddenly my racoon took a leap and a jump, I might almost say a flight, and pounced upon one of the largest and fattest members of the winged troop.

“The only fault I had to find with him was, that he did not respect the inhabitants of our poultry-yard. In this matter his conduct was not what it should have been. He stole the eggs whenever he got the chance. Besides the dainties to which he thus helped himself occasionally, he fed upon maize boiled in water, some fresh milk being added when I wished to give him a treat. Alas ! the poor beast died the victim of his gluttony. He swallowed a rabbit whole, one fine morning ; yes, hair and flesh and bones ; swallowed it whole, like a boa-constrictor, and perished of the deed !”

But we must turn from the quadrupeds of the American Forest and Prairie, though conscious that we have not exhausted the interest that attaches to them. The Birds now demand our attention, and among these we shall find some remarkable and attractive species.

BIRD LIFE IN THE FOREST AND PRAIRIE.

In America there are probably about three thousand species of birds ; but of these a few are also found in Europe, being chiefly water-fowl, and common, therefore,

to the northern coasts of both countries. Many pay a visit to our own islands towards the close of the year ; remain during the winter months ; and with the first warm rays of spring betake themselves to the rivers, creeks, and channels of higher latitudes. The sea-birds on the North Pacific and Behring Strait are nearly all identical with, or are closely allied to, those which inhabit the waters of Greenland and the North Atlantic. The large white albatross looms through the mists of the Pacific like a restless spirit. A true child of the storm, it seems to find a pleasure in the most terrific gales ; tranquilly spreading forth its ample wings, and sailing onward for a whole day without resting its bosom on the surging billows.

To America as well as to Europe belong several species of eagles and of other birds of prey, and many of the web-footed birds and waders inhabit both continents. It must not be supposed, however, that the North American birds generally resemble those of Europe. As the scenery and climatic conditions differ, so do the birds. There are no humming-birds in Europe, but six species inhabit North America. Europe has not a single representative of the parrot tribe, while America can at least boast of its Carolina parrot and its brilliant macaws. The forests are haunted by a complete world of woodpeckers, and their restless tap is to be heard in whatever direction the traveller explores the wooded glades. Pigeons are innumerable ; the passenger pigeon sweeps over the Northern States in clouds which darken the sky for day after day twice a year. The turkey runs wild in America, and from thence was imported to adorn our European poultry-yards.

The Baltimore oriole in the south builds its ingenious nest in many a sheltered locality. Of grouse America counts about thirteen species. Surveying the Bird World as a whole, we find that America can claim as its own, six hundred and twenty-eight generic forms.

We shall briefly describe a few of the most interesting.

The Snowy Owl is very plentiful in North America. Unlike its congeners, it hunts for prey both by day and night. Though in some individuals the plumage is so white as to



SNOWY OWL.

justify their popular name, in others, and perhaps in the majority, it is much shaded and diversified by dusky brown.

It has a firm, steady, smooth, and noiseless flight. Over its hunting-ground it passes rapidly, but its keen eye quickly detects its prey, upon which it instantaneously falls, devouring it on the spot. If its victims, such as

ducks, grouse, or pigeons, are on the wing, it redoubles its speed, soon outstrips and overtakes them, and carries them off in its cruel talons, to devour them in some convenient spot. It is fond of the vicinity of rivers and streams, especially of those which are interrupted in their course by shallows or rapids; for it posts itself on their borders, and seizes on fish, in the same manner as the wild cat.

The Goat-suckers, or Night-jars, industrious insect-eating birds, of great utility, are represented in America. They frequent the neighbourhood of the woods and coppices; lying concealed during the day, and at dusk sallying forth, generally one by one, in search of food. Two are seldom seen together, except during the breeding season. Then, while the hen-bird is sitting, the male may be seen hovering close at hand, and fluttering about in the air, even during the day; mounting by several quick vibrations of the wings, and then a few slower, uttering all the while a shrill harsh sound; until, having attained the highest point, he comes down head foremost, suddenly, and with great speed,—down for some sixty or seventy feet,—then up he goes again, with a loud booming noise, like that produced by the bursting of a bladder. This is supposed to be occasioned by the sudden expansion of his capacious mouth as he darts through the air. The alternate exercise of rising and descending he repeats very frequently throughout the day.

While the female is sitting, she will suffer a stranger to approach within a foot or two before she offers to move; then she flutters and limps away, so like a wounded bird

as completely to deceive the inexperienced ; and thus, by enticing him to pursue her, she insures the safety of her nest. This "pious fraud" is continued only till she has drawn him away to some distance, when she mounts into the "liquid air," and is soon out of sight.

Members of the *Corvidæ*, or Crow tribe, are found in every part of the globe, except the Polar Regions, where they would fail to meet with a sufficient supply of food for their omnivorous appetites. The Raven, however, that bird of ill omen, ranges as far north as Melville Island ; and Sir James Ross does honour to him as one of the few birds which brave the inclemency of an Arctic winter. In the most intense cold he frequents the bare and dreary lands, following up the track of the wandering herds of cariboes, musk-oxen, and bisons, and eagerly banqueting on the remains of those which perish through accident, or are slaughtered by birds of prey.

Audubon speaks of him as in some degree a migratory bird,—individuals retiring to the far south during rigorous winters, but returning to the central, the western, and the northern states at the first signs of more genial weather. His habits are so well known as not to need description ; while few of our readers but will have seen this stately, sombre bird, and will be familiar with his deep hoarse voice, his broad gloomy wings, and his dark shining plumage.

" The thievish Pie in twofold colours clad
Roofs o'er her canvas nest with fern-wreathed twigs,
And sidelong forms her curious door : she dreads
The taloned kite or pouncing hawk ; savage
Herself—with craft, suspicion ever dwells."

The ingenious structure of the Magpie is frequently met with in the American woods ; a large and elaborate edifice, formed outwardly of sharp thorny sticks, briers, and brambles, interwoven very strongly and artistically, and built up into a kind of dome. The entrance is at the side. Internally, the nest is first lined with a coat of earth, to keep it smooth and air-tight, and then with a layer of dried grass and fine fibrous roots. The whole is generally erected in a thick tree, and surrounded by a kind of irregular *chevaux de frise*, to protect it from its enemies.

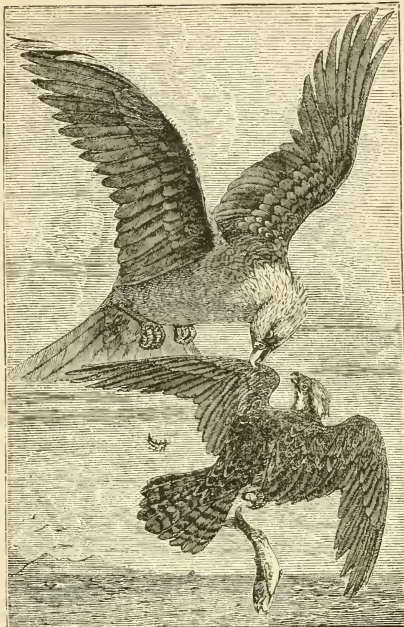
But we have still to notice a nobler bird, which has suggested to the American Republic its national symbol. The great Bald or White-headed Eagle inhabits the regions of the almost interminable forests, the mighty rivers, and the ample lakes. Larger than the white-tailed eagle of Europe in size, and exceeding it in sweep of wing, its habits are the same. It feeds eagerly upon fish and carrion, and may frequently be seen in the neighbourhood of the Falls of Niagara, watching, in company with the raven and the vulture, for the carcasses of animals brought down the tremendous steep of the great cataract. It builds its nest of tufts of grass and dry twigs and sticks, sometimes among the branches of tall trees, and sometimes on the ledges and crags of the rocks and cliffs. Hither it returns, season after season, enlarging it every year, so that in course of time it assumes considerable dimensions. The female lays a couple of eggs, of a bluish white colour.

The Osprey, or Fish Hawk, abounds in the same localities, and is often doomed to surrender its prey to its more

powerful congener. One of the finest passages in Wilson's "Birds of America" is that in which he describes a struggle between these predatory birds.

Elevated on the high dead branch of some lofty tree, the eagle appears to survey with calm indifference the motions of the various feathered tribes that pursue their avocations in the lower air: snowy gulls, slow-speeding on lazy wings; busy tringas, hastening along the sands; trains of ducks, streaming over the surface of the great lake or inland sea; silent and watchful cranes, intently wading; and clamorous crows, wheeling in rapid flight with all the winged myriads that derive their subsistence from the bounty of the inexhaustible waters. High over all these appears one whose action intently engages the eagle's attention. He is no longer tranquil and indifferent, for he knows him to be the fish hawk, preparing to pounce upon some devoted victim of the deep. At the sight his dark eye kindles, and balancing himself with half-opened wings on the branch, he watches the result. Down, swift as an arrow from a well-strung bow, plunges the fierce hawk; the roar of his wings reaching the ear as he disappears in the deep, raising jets of foam and spray all around! At this moment the eagle's glance is all ardour, and levelling his neck for flight, he sees the fish hawk emerge, with his prey struggling in his talons, and mount rapidly in the air, uttering loud screams of exultation. These are the signals for our hero, who, launching into the air, instantly pursues, and soon overtakes the hawk, each straining every muscle to mount above the other, and displaying in their manœuvres the most graceful and sublime aerial evolutions.

But the eagle is unencumbered, and can advance and



BALD EAGLE AND FISH HAWK.

wheel with the utmost ease. He is just on the point of striking at his opponent, when the latter, with a mingled scream of rage and disappointment, drops his fish. The eagle, poising himself for a moment, as if to make sure of his aim, swoops down like a whirlwind, seizes the ill-gotten booty in his grasp before it can reach the water, and then triumphantly car-

ries it off to his eyrie in the woods.

The reader may be glad to be reminded that a similar scene has been described by the poet Spenser :—

“Like to an eagle, in his kingly pride,
Soaring through his wide empire of the air
To weather his broad sails, by chance has spied
A goshawk, which hath seized for her share
Upon some fowl that should her feast prepare.
With dreadful force he flies at her again,
That with his voice, which none endure or dare,
Her from the quarry he away doth drive,
And from her griping pounce the greedy prey doth rive.”

In America is also found the Golden Eagle, that most magnificent of his tribe. He sails through the expanse of air with a powerful and majestic flight, and rises to such a lofty elevation that to the eye he appears a mere speck against the "ethereal blue." Yet such is his keenness of vision, that even at this height he can readily discover his prey upon the ground below him, and will descend with a wonderful velocity and certainty to seize it. His strength renders him a formidable enemy to young lambs and fawns, which he carries off in his talons to his eyrie among the rocks. Hares and rabbits, grouse and partridge, are also among his prey.

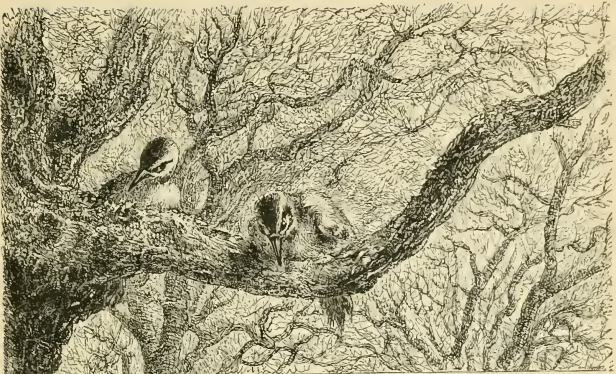
Though he has been celebrated by the poets as the type of magnanimity and courage, this splendid bird is, in truth, but a sorry creature. He is not the nobler or the happier for his swiftness of flight and his apparent supremacy over the other denizens of air. Like most robbers and vagabonds, he lives a life of wretchedness, poverty, and solitude. We believe, with Benjamin Franklin, that he is a mean and pitiful coward, whom the tiniest wren does not fear to attack with a courageous heart, and to drive from its neighbourhood. His magnanimity, like that of the lion, is one of the fictions of Natural History; and the undeserved reputation both the bird and the beast have obtained is a proof of the extent to which man is deluded by "appearances."

Yet the American eagle is not without its "good qualities." Like its European congener, it rarely lives alone; and the mutual attachment of male and female seems to endure from the moment of their first union down to the

time when death parts them from each other. They hunt for their food in company; and in company they devour it. You may see them flying together, whirling and wheeling in the "infinite azure," screaming with all their force, playing and even indulging in mimic battles with each other; and finally retiring to rest on the dry branches of a tree, where they have constructed their rude eyrie.

In the American forests, as we have already observed, the tap of the Woodpecker is a frequent and familiar sound. Wherever this bird is met with, and whatever the species, his habits are always the same. He inhabits the wooded country-side, and searches in every direction upon the trunks and branches of trees for the insects which form the chief part of his food. For this purpose he is continually "sounding" the bark with his strong bill, in order to discover the soft or rotten places tenanted by bark-feeding insects. On meeting with such a spot, he digs vigorously into the bark, and having fashioned a sufficiently wide opening, thrusts in his barbed and glutinous tongue to effect the capture of his prey.

It has been graphically said that the tree is all in all to the woodpecker; it is a castle, a pasture, a larder, a nursery, an alarm-drum, and a lute. When Nature revives under the bland influence of the joyous spring, and the woods assume their delicate veil of greenery, and all life is sensible of the quick vernal impulse, the woodpecker in the large cavity of the old forest-tree, and the eggs or larvæ in the little one, are both conscious of the stirring of a fresh vitality; and the woodpecker sallies forth, exultant, and



WOODPECKERS.

tests the lichened trunk until he comes to a hollow place, where he straightway beats as on a drum, in a succession of loud rolling taps, a kind of "rataplan." Though rude the instrument, the bird elicits from it a music which is not to be despised. The sound swells and sinks, and sinks and swells again, now faster and now slower, till, at a distance, it echoes like the murmur of a festal song: and if the woodpecker's mate hears it, she straightway replies; and then their troth is plighted, and the labour of the season begun. Otherwise, the male glides on to another tree, uttering his quick cry of *plu-i, plu-i*, and resumes his serenade; and should there chance to be in the wood more

males than mates, the love-call may occasionally be heard until the summer fervours evaporate the energy which was inspired by the young, fresh spring.

The two woodpeckers, male and female, having selected the tree which is to be their home and nursery, proceed to the construction of their nest. Should there be no natural hole in the trunk, they begin to make one ; working together, and working so strenuously that the strokes of their sharp bills cannot be followed up by ear or eye. Do not censure them as remorseless enemies of the forest, however ; for they never attack a tree which has not felt the influence of decay. It is in an unsound tree that they necessarily find insects most plentiful ; and, moreover, its timber is most easily excavated. To attack a healthy tree would be to incur immense labour for a trifling recompense.

Their mode of using their bill is peculiar. Their operations have been compared to those of the carpenter ; but, in truth, they have a closer resemblance to those of the mason, for they dig away at the timber as a mason does at a block of granite which he wishes to perforate. Further, they are careful not to make the cavity wider than is absolutely essential for their own egress and ingress. They usually burrow so deeply as effectually to insure the safety of their eggs during their occasional absences ; and they also take heed to select some hidden or out-of-sight part of the tree. The sound of their bills when at work—not unlike “the grinding of a thick piece of steel on a rather smooth stone”—is audible at a considerable distance ; but though the wayfarer may detect the sound, he will not easily discover the birds. “This,” says an acute observer,

“arises partly from the uncertainty of the direction of sounds in forests (which, by the way, prevents animals from being betrayed by their own notes, either into danger or out of their prey), and partly from the ease with which the woodpecker can glide spirally round and gradually ascend, always keeping on the side of the tree opposite to the observer.”

The birds carry in no foreign materials for their nest. It is made of the small chips and saw-



WOODPECKERS AT HOME.

dust thrown off in the course of their operations ; and on this layer, as on a couch, the female lays four or five eggs, of a smooth and glossy texture, and of a pure white.

The Red-headed Woodpecker is an American species, ranging from Canada to Louisiana. He measures about ten inches in length ; and, as his name implies, his head and neck are of an intense scarlet. Like his congeners he feeds upon insects, but he also feeds upon fruits, and shows a strong partiality for the best kinds. No Kentish lad or lass was ever fonder of ripe cherries ; and he shows a discriminating taste with respect to pears and apples. If interrupted when regaling himself on the latter, he thrusts his open bill deep into the finest one hanging near him, and carries it off to the woods. He is much

persecuted by the black snake, which, in spite of his strident clamour, invades the nest, and devours the eggs or the young.

Whatever we may think of the industry displayed by the woodpecker in making for himself a home, it must be admitted that in ingenuity he is surpassed by the Baltimore Oriole,—a summer visitor to the United States, which receives his specific name from his black and orange plumage; black and orange having been the colours of Lord Baltimore, the founder of the colony of Maryland. He is also known as the Fire-bird, and the Golden Robin. Thus, in Longfellow's poem of "Autumn" we read:—

"Through the trees
The golden robin moves."

The beautiful nest of this bird is composed of fibrous materials, strongly and neatly interwoven, and suspended to the pliant extremities of the branches of trees. Selecting a couple of flexible boughs, at a considerable height from the ground, the oriole fastens around them strong strings of hemp or flax, and then proceeds to weave a pouch of similar materials, interwoven into a kind of coarse cloth. This pouch, which is six or seven inches deep, is lined with soft substances, worked into the outer texture; and the whole is finished off with a layer of horse-hair. The opening at the top of the nest is either furnished with a horizontal lid or flap, or sufficiently protected by the overhanging leaves. When busied in the construction of their nests, the ingenious little weavers will appropriate to



BALTIMORE ORIOLE AND NESTS.

their use almost any kind of fibrous material. The country-women are compelled to watch narrowly their thread that may be lying out to bleach, and the farmer over his young grafts, or they will certainly be subjected to a "requisition." Skeins of silk and hanks of yarn are treasure-trove, which they at once turn to good account; though the oriole must have learned their value since the

colonization of America by Europeans—an interesting proof of the bird's intelligence.

In the poem of Longfellow from which we have just quoted occur the following lines :—

“The purple finch,
That on wild cherry and red cedar feeds,
A winter bird, comes with its plaintive whistle,
And pecks by the witch hazel, whilst aloud
From cottage roof the warbling bluebird sings,
And merrily, with oft-repeated stroke,
Sounds from the threshing-floor the busy flail.”

The Bluebird to which the poet alludes fills in the United States much the same place as is filled in Britain by the robin. Though a bold and pugnacious bird, he is very familiar with man, and does not fear to approach the house, to perch on the step, or to chirp at the window. His song is described as exceedingly sweet. He bears a lively resemblance to our winter-friend the robin, and, like him, displays a bright red breast; but the colour of the upper plumage is a light blue.

Reference must also be made to the Cedar-bird; a species nearly allied to the waxwing or Bohemian chatterer, but peculiar to the North American continent. Apparently it migrates from one part of the country to another in search of its favourite food, the berries of the red cedar. But it feeds also upon other berries, and for ripe cherries evinces a strong predilection. It usually builds its nest, which is composed of grass, in the boughs of an orchard-tree.

Before quitting the American Bird World, we must take note of the remarkable species known as the Purple Grakle, or, as it is sometimes called, the Crow Blackbird.

The purple grakle makes its appearance in the United States during the summer, but at the first signs of winter betakes itself to the sunnier south. It commits much havoc in the corn-fields; yet, as it destroys immense numbers of grubs and caterpillars, it is not unwelcome. There need be something to counterbalance the mischief it does to the maize crop. It attacks the ears when they are in a milky state, stripping off the shield of young leaves intended for their protection, and devouring them with the greatest avidity.

It builds its nest among the highest branches of the tall cedars and stately pines; a nest composed of mud, mixed with grass and roots, and lined with fine fibres and hair. According to Wilson, it sometimes constructs its home, and rears its young, in the interstices left between the large sticks in the nest of the osprey; and the two birds, though in such close neighbourhood, live on the most amicable terms.

Another enemy of the corn crops, and like the grakle migratory in its habits, is the Red-winged Starling, which spends the winter months in the southern states of the Union, and advances northward at the return of spring. It is a smaller bird than the grakle, and its plumage is all of glossy black, with scarlet tints on the lesser wing-coverts. Though a costly intruder in the maize-fields, it probably earns a liberal wage by the incessant warfare it maintains against grubs, caterpillars, and other insects, whose secret

and insidious attacks, as Wilson says, are more to be dreaded by the husbandman than the combined forces of the whole feathered tribe together.

Its song is brief but sweet, and the notes most clearly recognizable seem to be expressed by the syllables *conk-quer-rée*. It builds its nest of rushes and coarse grass in the depth of an alder-clump, or in a tuft of thick herbage.

To the same family belongs the Cow-bunting, or Cow-pen Bird, which is remarkable for depositing its eggs in the nest of some other bird, after the intrusive fashion of the cuckoo. Its singular name alludes to its habit of frequenting the enclosures in which the cattle are confined, where, amongst the ordure, it seeks for seeds, worms, and insects.

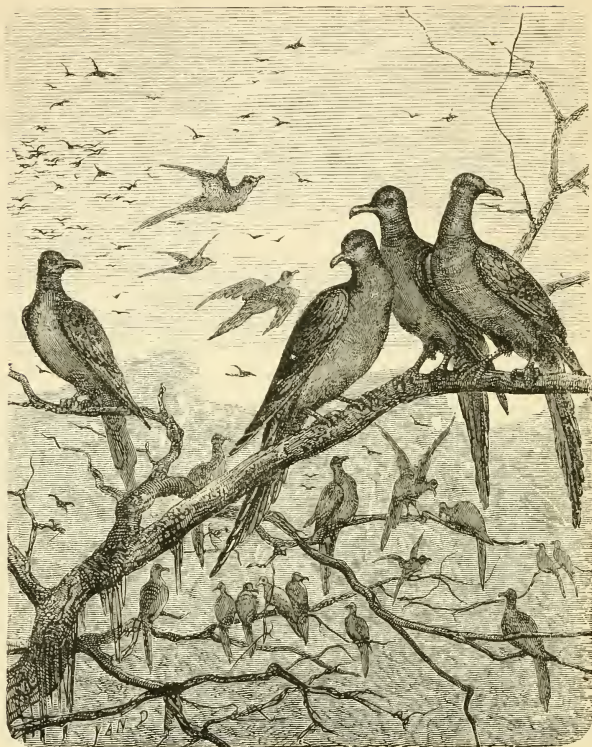
As we have said, it builds no nest, and the female drops her eggs singly in the nests of several species of small birds; and it is to be noted that these foster-parents take affectionate care of the nurslings thus imposed upon them. The young cow-bird, like the young cuckoo, is always found alone in the nest of which possession is so unceremoniously taken—probably, it rids itself of the legitimate tenants in the same way that the cuckoo does. At all events, it is found that when the parasitical egg is deposited in the nest before the eggs of its owner, the latter then takes flight, and the purpose of the cow-bird is thus defeated. Wilson placed a fledgeling of this species in the same cage with a cardinal grosbeak, which, as soon as its little companion became clamorous for food, made all possible exertions to satisfy its appetite. When he found

that a grasshopper which he had caught was too big for the nursling, he broke it into small pieces, which he passed through his bill to soften, and then, with the most admirable tenderness, placed one by one in the eager mouth of the tiny expectant.

The plumage of the cow-bunting is black, with a greenish gloss ; the head and neck are of a deep silky drab colour, and the breast a violet.

The habits of the Columbidae, or Pigeon tribe, are so well known as not to need a detailed description ; yet we could not quit the Bird World of North America without some reference to the Passenger Pigeon, which is remarkable on account of the immense numbers in which it associates together, and the extraordinary migrations performed by these vast flocks. The migrations are undertaken in search of food, especially of beech-mast, to which these birds are curiously partial. They settle down upon the forest like a cloud of locusts, and having consumed the whole supply within reach, wing their way to some other district, perhaps at a distance of many miles, but always returning every evening to the place where they first took up their abode.

An American arithmetician has made an approximative calculation of the number of individuals composing one of these extraordinary legions, and of the enormous quantity of food necessary for their sustenance. Taking, for example, a column about five hundred yards in breadth, which is certainly below the ordinary measurement, and allowing three hours for the birds composing it to accom-



PASSENGER PIGEONS.

plish their flight,—as their rate of speed was equal to five hundred yards a minute, its length would be two hundred thousand yards! Supposing, now, that each square yard was occupied by ten pigeons, we may conclude that their total number amounted to one billion, one hundred and twenty million, and one hundred and forty thousand; and

as each bird daily consumes a quarter of a bushel of seeds or fruits, the daily nourishment of a single band would not require less than one hundred million, seven hundred and eighty thousand bushels. Allowing for some exaggeration in these figures, the truth remains sufficiently formidable.

The American pigeons, besides their faculty of flight,—which surpasses that of any other bird,—are endowed, in a very remarkable degree, with the gift of sight. They do not need to pause for the purpose of exploring the district over which they wing their way, and discovering whether it possesses their favourite seeds and fruits. Sometimes you will see them mount to a great elevation, and extend their battalions on every side: they are then engaged in reconnoitring the ground. Sometimes they close up in a compact body, descend towards the earth, and seem to consult with one another: be sure that they are satisfied with the outlook before them, and that they have alighted on a fertile feeding-ground.

Everything in the structure of this bird—its nervous wings, its bifurcated tail, and its oval-shaped body—indicates the power of sustaining a rapid and prolonged flight and continuous respiration. Such an organization might seem incompatible with tenderness of flesh; but, on the contrary, the passenger pigeon is relished as a dainty all over America, and every man's hand is against it.

CHAPTER III.

THE PAMPAS OF SOUTH AMERICA ; AND THE ANDES.



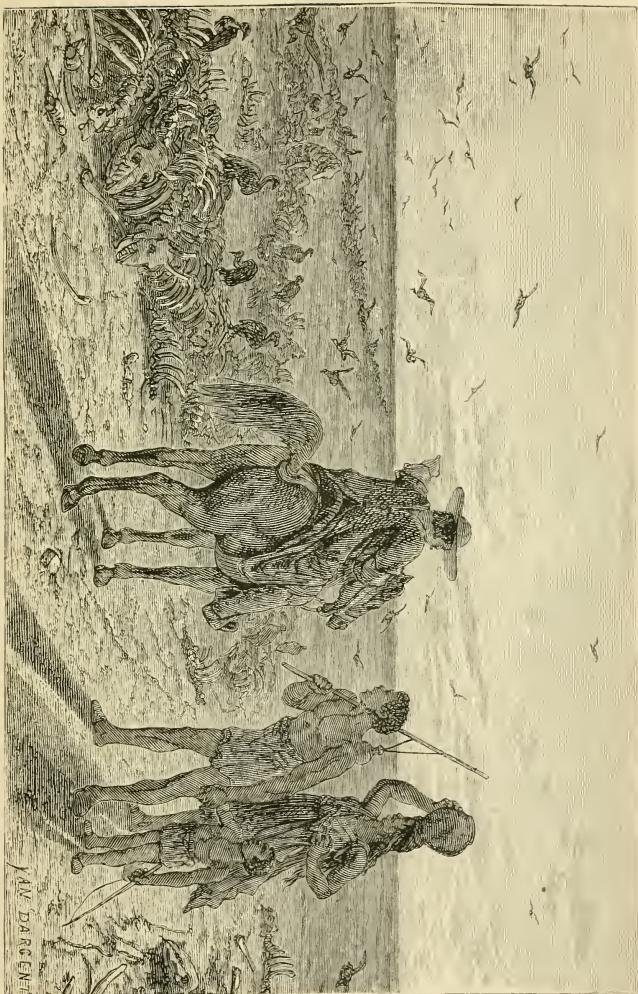
E must now ask the reader to accompany us to the South Temperate Zone of the New World ; including the llanos of Paraguay, La Plata, and Uruguay, the Andean region of Chili, and the plains and ridges of Patagonia.

South America exhibits three great basins, or tracts, of low and comparatively level lands—the desert of Patagonia, the pampas of Buenos Ayres and Paraguay, and the silvas or virgin forests of the Amazons.

The Patagonian plains and the pampas cover an area of about nineteen hundred miles in length—from Tierra del Fuego to the mountains of Brazil. Necessarily the climatic conditions vary greatly over so vast an extent ; and therefore, while palm-trees flourish on the Brazilian borders, deep snow covers the wastes of Tierra del Fuego for many months in the year.

For nearly two hundred miles west from Buenos Ayres the pampas bloom with thistles and lucern of the brightest green, so long as the moisture from the rain endures. In spring the greenness passes away ; and a month afterwards

PAMPAS OF SOUTH AMERICA.



ALV. DARGENTI

the thistles spring up to a height of ten feet—forming a jungle so dense and so protected by spines as to be almost impenetrable. During the summer the wind mows down the dry stalks as with a sickle, and the lucern once more clothes the soil with verdure.

For fully four hundred miles westward of this thorny waste the pampas are “a thicket of long-tufted luxuriant grass,” intermixed with bright flowers, and affording an inexhaustible pasture to thousands of horses and cattle. It is to this portion of the pampas an American writer refers in the following passage :—

“The pampas,” he says, “surpass in majesty all the marvels of the New Continent ; and yet they astonish the traveller by the air of abandonment and sadness which is impressed upon them, especially in the low country watered by the Plata. Traces of life are there infrequent ; still rarer are the objects which attract attention. Here, at the bottom of a crevasse, a cactus conceals its head bristling with spines ; there, a solitary tree rises majestically toward heaven. Sometimes, upon the plain, the eye discovers the monstrous skeleton of an animal which flourished in those remote times when the Andes still slept in the depths of ocean, and dreamed not of blending their snow-burdened peaks with the clouds. The pampas serve as the burial-place for races of gigantic men, now extinct, who seem to issue from their silent graves in testimony to the former being of vanished generations, and to bear witness to the Creator of all things. Above your head, and far away in the azure of heaven, you perceive a black point : it is a condor describing slowly its sinister circles.

In the distance passes and disappears the ungainly figure of a rhea (the nandu). The inexpressible charm of these solitudes is their absolute freedom. And while traversing them the wayfarer comprehends the love with which they inspire the Indian, whose hope it is to meet beyond this world with yet vaster horizons for the indulgence of his wandering tastes."

After crossing these romantic plains we come to a tract of swamp and bog; which is succeeded by a region of ravines and stones; and this by a belt, reaching to the Andes, of thorny bushes and dwarf trees massed together in an impervious thicket.

ANIMAL LIFE IN THE PAMPAS.—THE MAMMALS.

Strange to say, prior to the conquest of South America by the Spaniards, not a single species of the great family of the Equidæ inhabited the wide grassy tracts of the pampas. The New World possessed no animal analogous to the horse, the onager, the hemione, the zebra, or the quagga; and the reader of the picturesque pages of Prescott and Sir Arthur Helps will not fail to remember with what terror the Peruvians in the south, and the Mexicans in the north, regarded the mounted followers of Pizarro and Cortes. Yet, when introduced by Europeans, the horse, as might have been expected, multiplied rapidly in the fertile regions of the pampas; where he soon became wild, and, breeding with the ass, produced the mule—which, in South America as in Europe, proves man's most useful auxiliary. The European ox is likewise acclimatized over the entire extent of the New Continent; and immense

herds, together with large troops of horses and mules, people these broad pastures and breezy table-lands where the Spanish conquerors found only the stag, the llama, and the guanaco.

The llama, the guanaco, and his congeners the vicuña and the alpaca, have retreated before the incessant pursuit of man to the valleys and passes of the Andes.



1. GUANACO.—2. LLAMA.—3. VICUNA.

The Llama, which in the natural economy of the New World fills the place occupied by the camel in the Old, is capable of carrying a burden of one hundred to one hun-

dred and twenty-five pounds. If the load put upon him exceed his strength, he lies down, and shows himself inflexible to force or persuasion until it is removed or lightened. His usefulness in the silver-mining districts cannot be overestimated ; for he can carry the metal from the mines in places of such abrupt descent that neither mules nor asses can keep their footing. His abstemiousness is remarkable ; and, unlike the Equidæ, he will not feed during the night.

A flock of llamas journeying across the table-lands is, according to Dr. Von Tschudi, a beautiful sight. They proceed at a slow and measured pace, gazing eagerly in every direction. When scared by any unusual object, the flock separates, and scatters all round about, so that the *arrieros* have no little difficulty in reassembling it. The Indians are very fond of these animals. They adorn them by tying bows of ribbon to their ears, and hanging bells round their necks ; and before loading, they always fondle and caress them affectionately. If, in the course of the journey, a llama grows fatigued and lies down, the *arriero* kneels beside him, and addresses him with the most coaxing and endearing expressions. But in spite of all the care and attention bestowed upon them, many llamas perish on every journey to the coast, being unable to endure a warm climate.

When resting, they give utterance to a curious humming sound, which, when heard at a distance, and proceeding from a numerous flock, resembles a concert of Æolian harps.

The flesh of the llama is fibrous in texture, and not

agreeable in flavour. His wool has been utilized to some extent in the manufacture of a coarse kind of cloth.

Smaller than the llama, but belonging to the same family, is the Alpaca, or Paco. There is a strong resemblance to the sheep in the general configuration of its body, but the neck is longer and the head more graceful. Its wool is very long—on some parts of the body four or five inches—and it is exceedingly soft and silky. Its colour is generally black, but sometimes speckled with brown and white. It is largely exported to England; where an alpaca factory was first erected at Saltaire, near Shipley, in Yorkshire, by Sir Titus Salt, in 1852. Considerable quantities are also obtained from Australia, where the alpaca has been naturalized through the patriotic and persevering exertions of Mr. Ledger.

The alpacas are kept in large flocks, which for the greater part of the year graze on the grassy table-lands, and are driven to the huts only at shearing-time. They are remarkably timorous, and take to their heels at the approach of a stranger. Their obstinacy is equal to their timidity. Should one of them by any chance be separated from the flock, he will throw himself on the ground, and neither blows nor caresses will induce him to move. He will frequently suffer the severest punishment rather than go the way his driver wishes. Few animals seem to stand in more urgent need of the companionship of their species, and they can be separated from the flock only at a very early age.

The largest species of the llamas is the Guanaco, or

Huanacu, which ranges over the whole extent of Patagonia. He measures five feet in height to the crown of the head, and three feet six inches, or less, to the shoulders ; and lives in small herds, numbering from five to thirty, but is sometimes seen in more considerable companies. They resemble sheep in their gregarious habits, and in their servile obedience to the will of a leader. If they should chance to lose the latter, they grow absolutely bewildered, and wandering pell-mell from place to place, fall victims to the watchful hunter. The guanaco is exceedingly shy and timid ; but he is also very curious, and can be drawn towards the hunter by his lying down on the ground and throwing up his feet in the air. But he is a wary animal, and quick of sight, and on seeing man, woman, or child approach his resting-place, utters a shrill, neighing scream, which gives warning to the whole herd, and sets them off at a gallop to seek some remote asylum.

Of all the llamas, the Vicuña, or Vicugna, may claim the prize for beauty. He inhabits the highlands of Bolivia and Chili, and has never yet been successfully domesticated. In size he comes between the llama and the alpaca.

The vicuña lives near the region of perpetual snow, and resembles the chamois in some of his habits. He goes about in herds, each consisting of one male and from six to fifteen females ; and while the latter are grazing, he stands apart, and watches carefully over their safety. At the approach of danger he gives a signal, consisting of a kind of whistling sound and a rapid movement of the feet. Immediately the herd draw close together, each animal

stretching out its head in the direction from which the alarm proceeds. Then they beat a retreat—at first leisurely and cautiously, but soon quickening their pace to their utmost speed; while the male vicuña, which covers and directs this strategic movement, occasionally pauses to observe the motions of the enemy. The females reward his devotion by the fondest affection and fidelity, and will suffer themselves to be captured or slain rather than desert him.

The mode in which the Indians hunt the vicuña is worthy of description. In the *chaco*, as it is termed, the whole company, generally seventy or eighty in number, proceed to the Altos—those lofty, secluded districts of the Andes which are the animal's favourite haunt—with an abundant supply of cordage and a quantity of strong stakes. On arriving at a suitable spot, they drive these stakes into the ground in a ring, at intervals of twelve to fifteen feet apart, and connect them together by ropes at a height of two to three feet from the ground. The area thus enclosed generally measures about half a league in circumference; and an opening about two hundred paces wide is left for entrance. On the ropes carried round the stakes, pieces of coloured rags, that flutter gaily in the wind, are hung by the Indian women.

The chaco being thus completed, the Indian hunters, who are mounted on horseback, range over the country within a circuit of several miles, driving before them all the herds of vicuñas they fall in with, and forcing them into the chaco. As soon as a sufficient number are got together, the entrance is closed up. The timid animals

make no attempt to leap over the ropes, being terrified by the fluttering rags; and when thus secured, the Indians easily kill them with their *bolas*.

What is a bola?

It consists of three balls, either of lead or stone, of which two are heavier than the third. These are attached to long elastic strings, made of twisted sinews of the vicuña; and the other ends of these strings are all tied together. The Indian takes in his hand the lightest of the three balls, and swings the others in a wide circle above his head; then taking aim, at the distance of some fifteen or twenty paces, he lets go the hand-ball, whereupon all three describe a rapid revolution, and cling round the object aimed at.

The aim is usually directed at the hind-legs of the animal; and the cords twisting round them, it is unable to move. Great skill and long practice are required to throw the bola dexterously: a novice incurs the risk of dangerously wounding either himself or his horse, by not giving the balls the proper swing, or by letting go the hand-ball too soon.

The mammals of South America, it is to be noted, are much inferior in size to those of the Old World. They are not only on a smaller scale, but feebler in frame and gentler of disposition. Many of them—such as the sloths and other edentates—are of anomalous and less perfect structure than the rest of the Animal World; and the majority of them belong to genera and even to families confined to South America. Five genera and twenty

species of the edentates, including the sloths, armadilloes, chlamydophore, and ant-eaters, are exclusively South American.

The sloths and ant-eaters belong to the Virgin Forest region, and therefore belong to the Tropical World. As for the armadillo, in its coat of mail, it is found on all the open plains and table-lands as far south as Paraguay ; with the exception of the tatou, or giant armadillo, three feet long, which inhabits the dense woodlands of Brazil and Guiana.

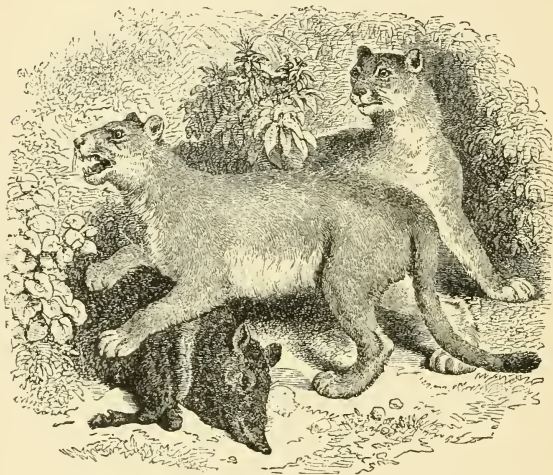
Nearly akin to the armadilloes is the curious little chlamydophore, called the pichiciago, a native of Chili, which seems to form a link between the armadillo and the mole. The top of its head, its back, and its hind-quarters are covered with a shelly plate, which "stops short" on the haunches with a singular effect : the rest of the body is clothed in long, soft, and silky hair. It lives upon worms and insects ; and, like the mole, lives almost entirely underground.

The ant-eater is larger than a Newfoundland dog. As its name implies, it wages war against the ants ; and also, we may add, against termites and insects generally. It is found in the swampy savannas and damp forests—which necessarily swarm with insect life—from the Atlantic to the foot of the Andes, and from Columbia to Paraguay. Its flesh has an odour of musk, but the Indians eat it.

To the plains belongs the so-called American Lion, the Puma. His total length is about six feet and a half, of which the tail occupies about two feet. The tip of the

tail is black, but is without that black tuft of long hair so characteristic of the true lion. His limbs are robust and muscular, as are requisite in an animal whose habits are almost entirely arboreal. His skin is of a light tawny colour, deeper in some individuals than in others.

Until experience has taught it the perils of an encounter with man, the puma is a troublesome neighbour, and is



PUMAS

known to follow up the traveller for a considerable distance, watching for an opportunity of springing upon him when he is off his guard. But he has a wholesome fear of the human eye, and is not dangerous so long as he can be kept in sight.

Even, says Mr. Wood, in those rare instances when the puma, impelled by fierce hunger, emerges from the shelter

of the woods, and tracks the very pathway that has been trodden by the travellers, yet there is no real danger. The puma will creep rapidly towards the party, and in a short time approach sufficiently near to make its fatal spring. But if one of the travellers face sharply on the crawling animal, and look him full in the face, the beast is at once discomfited, and retires slowly, moving his head from side to side, as if he were fain to shake off the spell of the steady tranquil gaze to which he has never been accustomed, and which fills him with an indefinable dread.

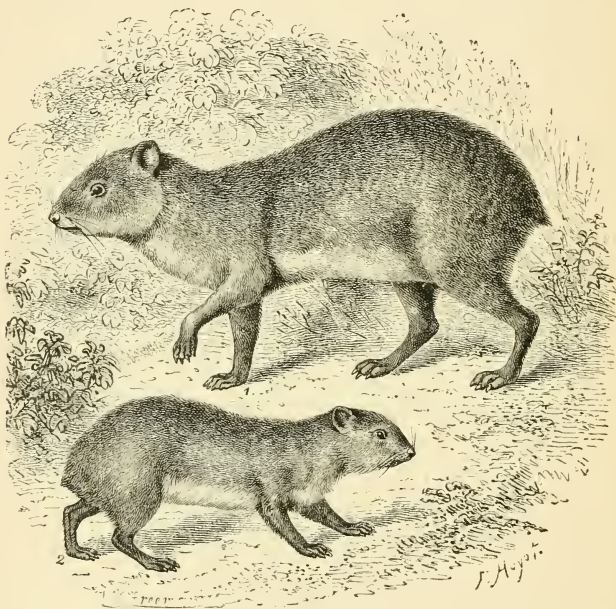
The puma lies in wait for his prey among the leafy boughs of the forest trees; and when the capybara, the peccary, or any smaller animal, passes underneath, he suddenly springs upon it with an aim which never fails and a grasp which can never be shaken off.

It should be noted that the disposition of the puma appears to vary in different localities: in Peru he displays a considerable degree of audacity; in Chili he is so timid that he flies at the approach of a dog.

The South American rodents are very numerous, as might be expected in a region so abundantly supplied with vegetation. The Agoutis flourish on the grassy plains of Patagonia, Buenos Ayres, and Paraguay, ranging even into the Tropics, and as far as Guiana. They eat almost every kind of vegetable food; but as they show a marked preference for the plants cultivated by man,—potatoes, yams, sugar-canes, and the like,—the agriculturist regards them with antipathy, and pursues them to the death. They are nocturnal animals; very nimble in their move-

ments, and furnished with teeth so sharp and strong that they will eat their way through a wooden door.

The Capybara belongs to the same family as the agouti, but in appearance seems more nearly related to the



1. CAPYBARA.—2. AGOUTI.

swine ; and, indeed, in allusion to his size, his coarse bristle-like hair, his hoof-like toes, and clumsy build, he is frequently known as the Water-hog. His feet are webbed ; and he loves to frequent the pools and streams, always taking to the water when alarmed, and swimming and

diving with great dexterity. Of all the rodents he is the largest, his body exceeding three feet in length, and its girth being such that when he walks his abdomen nearly touches the ground.

In Central America abounds the Coypu, the fur of which is largely imported into Europe, where it has almost entirely superseded that of the beaver. Its colour is a light reddish brown. The coypu might easily be mistaken for the beaver, were it not for its long and rounded tail. It swims "like a fish," and is as much at home in salt as in fresh water, excavating its burrow on the banks of streams or on the shores of ocean-creeks with equal indifference. It is very active and lively, and can be easily tamed. We have seen one in the possession of Dr. Paterson, of Bridge of Allan, which knew its master's voice, and issued from its retreat at his call. It seems to be partial to washing every article that falls within its reach.

In the Andes of Peru, Bolivia, and Chili, in the elevated districts, and even at a height of 15,000 feet above the sea, is found the beautiful and valuable Chinchilla, whose fur forms so important a commercial staple.

It is a burrowing animal, excavating its underground domicile in the mountain-valleys, where its thick silky coat protects it from the cold. In appearance it is much like a rabbit with a squirrel's tail. In disposition it is mild and gentle, and it lives with its kind on the most amicable terms.

BIRDS AND REPTILES.

When we come to consider the Birds of South America, we find that no other country exhibits such a variety of original forms. Of the Passerine family alone, there are at least one thousand species, all exclusively South American.



CONDOR.

Some of the more remarkable of these we have already described. Necessarily, the majority live in the great forest-region of the Amazons; but to the region which now claims our attention belong certain genera and species of an interesting character.

The Vultures are of different genera from those in

Europe, and the largest of these is the magnificent Condor, which frequents the loftiest pinnacles of the mountains in summer, and builds his eyrie at an elevation of upwards of 15,000 feet above the sea. He wheels in lofty flight



KING VULTURE.

over the desert plains of Patagonia even to the mouth of the Rio Negro, and in winter descends in groups to feed on the low grounds and the sea-shore; for he possesses the true vulturine instinct of descrying a dead or dying animal at a very considerable distance. Though he feeds principally on carrion, he will sometimes attack the living

animal; but the stories commonly told of his ferocity are replete with exaggeration.

The Vulture Papa, or King of the Vultures, is characterized by the brilliant colouring of the naked skin of his head and neck, and is certainly the handsomest of the birds of prey.

He ranges over nearly the whole of South America; avoiding the mountains, however, and confining himself chiefly to the woods and plains. Thus he is an inhabitant not only of the Temperate Zone but of the Tropics, and is found in Guiana as well as in Paraguay. He feeds upon reptiles and carrion, and even upon ordure. One of the chief of Nature's scavengers, he devours great quantities of the fish which perish in the shallow lakes during the summer droughts.

He is also in the habit of visiting the neighbourhood of towns and villages, which are likewise frequented by flocks of the Gallinazos, or Turkey Vultures. Humboldt informs us that when a rapacious company of the latter birds are contending over their food, according to the usual vulturine fashion, the appearance of a single king vulture suffices to scatter them in all directions; nor do they venture to return until he has satisfied his royal appetite.

Among other raptores which belong to South America we may name the Burrowing Owl, found in great numbers in Chili and the pampas. It also inhabits the prairies of the Mississippi. Its peculiar habit is indicated by its name; it dwells, at all events during the breeding season, in subterranean burrows formed either by its own exer-

tions or by some industrious mammal. Here, at the bottom of the gallery, it piles up a bed of moss, dry roots, and grass, on which the female lays her eggs. In this comparatively secure retreat the fledgelings pass the early stages of their existence; occasionally advancing to the entrance, but starting back immediately on the appearance of any strange or suspicious object.

A remarkable genus of the goatsuckers, which belongs exclusively to South America, is the Guacharos. We notice it here, though, strictly speaking, it does not range beyond the limits of the Tropical World. It is about as large as a pigeon, measuring eighteen inches in length, including the tail; which, however, is very long in proportion to the body. Its bill is long and hooked, but broad at the base; the nostrils are large, and pierced near the middle of the sides of the bill; the toes are of moderate strength and length; and the general colouring of the plumage is sufficiently dull, consisting of minute spots of black, brown, gray, and red, relieved on the head and neck, and tail and wings, by a few patches of white.

The guacharos are nocturnal birds, but, unlike all other goatsuckers, they feed on fruits and seeds, and never on insects. Hence their fat is abundant, and yields a considerable quantity of excellent oil, for the sake of which they are eagerly hunted by the Indians. A favourite resort is a cavern at Caripe, hence called the Cueva del Guacharo; which, according to Humboldt, the Indians visit annually, on or about the festival of St. John. They take with them long poles, and with these destroy all the

nests they can reach, killing thousands of young birds. During the massacre, the old birds, powerless though anxious to defend their broods, wheel to and fro in the gloom, uttering the most piercing and discordant cries. The young birds are immediately opened, and the fat removed from them: it is afterwards melted in clay pots at the mouth of the cavern. The oil thus obtained is semi-fluid, transparent, and without smell; while such is its purity that it will not turn rancid even if kept for upwards of a twelvemonth.

So great is the annual destruction of these birds that their extermination would soon be brought about were it not, as Humboldt says, for some circumstances which favour the preservation of the species. Thus: it can hardly be doubted that they breed in many caverns which the oil-gatherers have never explored; and even in the Cueva del Guacharo their cries may be heard in galleries not visited by the Indians,—partly on account of their inaccessibility, and partly through superstitious terrors. “We had much trouble,” says Humboldt, “in persuading the Indians to pass the anterior portion of the cave, the only part which they frequent in their yearly collection of fat. It required all the authority of the *padres* to make them advance as far as a spot where the ground rises suddenly at an angle of sixty degrees, and the torrent breaks into a small subterranean cascade. The natives attach mystical ideas to this recess. Men, they say, should shun places which are lighted neither by the sun nor the moon. To go to the guacharos is to join one’s fathers—to die.”

The three-toed or American Ostrich, the Nandu or Rhea, ranges over a wide extent of country. He is found from the silvas of Brazil to the Rio Negro, which forms the southern boundary of the pampas of Buenos Ayres ; also, in some of the elevated plains of the Peru-Bolivian Cordil-



NANDU OR RHEA.

leras ; and as far south as the forty-second parallel. There are at least three species: the *Rhea Americana*, about five feet high ; the *Rhea macrorhyncha*, noted for its large bill ; and the *Rhea Darwinii*, which is much the smallest. The American differs from the African ostrich in having

three toes instead of two, and each toe armed with a claw. The head and neck are more fully clothed with plumage ; while the wings are furnished with plumes, and more completely developed. He is, however, incapable of flight ; representing another grade, as it were, in Nature's slow ascent from the wingless bird, doomed to a terrestrial existence, to the perfect bird that soars aloft on "rapid pens."

Of the Reptiles of the region we are now considering little need be said. Snakes are plentiful in the pampas, but exhibit no peculiar characteristics ; lizards also are common ; and in the warmer districts land tortoises are met with. But the pampas are not favourable to any extraordinary development of reptile life.

CHAPTER IV.

THE PLAINS OF EUROPE.



OUR survey of the Temperate World now brings us to the Plains of Europe. Here it will be unnecessary for us to linger in countries where the skill of the agriculturist has turned to advantage almost every inch of soil. It is not our purpose in these pages to describe the forms of animal life with which everybody is familiar—such as the horse, the sheep, the goat, the bull—but to confine ourselves to those which present some remarkable or characteristic details, or are gradually disappearing before the continuous encroachment of civilization. Nowhere has this encroachment effected greater changes than in Central Europe, where scarcely any remains are left of the vast forest that once extended over its level area. With the leafy wilderness has disappeared many of its inhabitants. The wolf, the bear, and the wild boar have been almost exterminated, or driven into a few solitary places among the Pyrenean or Scandinavian mountains, where their numbers are annually decreasing; and in the patches of woodland that bloom in the midst of the richly cultivated country the

principal inhabitants are the timid deer, the sportive squirrel, the hare and the rabbit, the partridge, and the singing birds which fill the "waste places" with their song.

We pass on then to the plains of Eastern Europe, where Man and Nature have still before them a protracted struggle for the mastery.

Almost all Eastern and Northern Europe forms one immense level, broken here and there by a few elevations and ranges of low hills. The country between the Carpathian and Ural mountains is a dull flat; and an equal uniformity prevails in the Russian steppes.

The word "steppe" is supposed to be of Tartar origin, and signifies "a level waste, destitute of trees." Hence the steppes vary in character according to the variation of the soil. They begin at the river Dnieper, and stretch along the shores of the Euxine. To the same region belongs all the country north and east of the Caspian Sea; and, passing between the Ural and the Altaï ranges, the steppes are continued in the barren lowlands of Siberia. "Hundreds of leagues may be traversed east from the Dnieper without variation of scene. A dead level of thin but luxuriant pasture, bounded only by the horizon, day after day the same unbroken monotony fatigues the eye. Sometimes there is the appearance of a lake, which vanishes on approach, the phantom of atmospheric refraction."

About June the heat grows intense in this dreary region, and the drought excessive. The grasses wither before the sun's keen rays. The dust is swept off the ground by the wind, to whirl around in suffocating tornadoes. Thus the



WILD HORSES IN A SNOW-STORM.

steppes situated in a comparatively low latitude alternately assume the most widely different aspects. In winter, flooded by the heavy rains, they are converted into impassable marshes. The genial spring clothes their nakedness with a delightful garb of grasses and other herbaceous plants, and for leagues upon leagues the pastures are cropped by thousands of grateful flocks. In summer the cycle is completed, and they are once more transformed into deserts as arid and sterile as those of Libya or Nubia.

These periodical changes exhibit the most surprising contrasts in the steppes that lie contiguous to the Euxine, the Sea of Azov, and the Caspian Sea, where winter comes attended with tremendous tempests and wild storms and drifts of snow. What can arrest the headlong fury of the gale, which sweeps before it the accumulated snows in fearful avalanches, and, like the demon in the old German legend, hurries onward the wild horses in a frenzy of rage? Half frozen by the cold, half spent with hunger, they flee in a complete panic. Oftentimes their mad precipitous course carries them on to the ice-crust which gathers over the shallower waters close in-shore; it cracks, it splits, it breaks up into confused fragments, and hundreds of horses perish! Towards the coming of the spring, the melting snows and pitiless rains drown the levels with vast floods of water; which, however, quickly evaporate beneath the influence of the burning sun. But in summer rain is exceedingly rare, and as there are neither brooks nor springs to refresh the thin soil in which the herbs and shrubs take root, these plants enjoy but a limited existence; they bloom and fade and die, like the ephemera of a day.

CHAPTER V.

THE ASIATIC PLAINS.



IN describing the characteristics of the European steppes, we have virtually described those of the Asiatic steppes ; for, in truth, they form but one vast region, interrupted by the Ural range, but alike in soil, climate, and physical configuration. In the Asiatic, as in the European plains, the struggle between spring and winter is severe and protracted ; for

“ Winter oft at once resumes the breeze,
Chills the pale morn, and bids his driving sleets
Deform the day, delightless.”

Yet when softer airs arise, and the waters pour off in torrents through the channels which they plough in the soft ground, again the glad earth blooms with verdure. The scorching summer sun, however, is not less rigorous in its consequences than the winter cold. In June the steppes are parched ; no shower falls, nor does the welcome dew quench the thirst of the dry-lipped earth. The sun, at its rise and setting, hangs suspended like a disk of fire, and during the day is shrouded in wreaths of mist. In some seasons the drought is excessive, so that an almost impal-

pable powder fills the air, the springs dry up, and the cattle perish in thousands. Death reigns victorious over animal and vegetable nature, and "desolation tracks the scene to the utmost verge of the horizon, a hideous wreck."

Some portions of this vast region possess an excellent but thin soil, which rewards the cultivator's labour with abundant crops. But a stiff cold clay at a short distance below the surface kills all deep-rooted herbs; and only the hardiest plants can endure a climate distinguished by such astonishing contrasts. A very wide range is hopelessly barren.

ANIMAL LIFE IN THE GREAT PLAINS.

It will be convenient to consider under one section the Animal Life of the great European and Asiatic plains.

Numerous companies of wild horses wander across these grassy breadths, and the Asiatic steppes are supposed by many naturalists to be the original cradle of their race. Shall we look upon them as the representatives of the primitive breed, from which have descended all the varieties known at the present day; or shall we see in them, as in the wild horses of the American prairies and pampas, the descendants of individuals which, at some remote period, escaped from human mastery? The latter hypothesis is generally accepted. But there are good reasons for believing that, under the influences of a life of freedom, these animals are returning to their primitive type. They have lost the "harmonious grace of form," the sleek beauty, and the robust strength which we observe in the horse as developed, educated, and perfected by the care and scientific intelligence of man. Between the wild horse of the

Ukraine and the steed of the Arab, the difference is as marked as between the European gentleman and the Malagasy savage. These wild horses are small of stature, with meagre limbs, and a coarse, woolly, and flaky coat. The mouth and nostrils are garnished with long hair, not unlike that of a goat. The colour is generally brown; brown of the dingy tint called Isabel, after that eccentric Queen of France who, in fulfilment of a vow, wore her linen unchanged for a twelvemonth and a day.

The immense herds of these wild horses are usually subdivided into companies of from twenty to thirty; each company living apart, but all combining when pressed by some common danger, or when an occasion arises for their migrating to some fresh district. However, they have few enemies to fear except the grim gaunt wolves, which hunger drives from the neighbouring forests; and man, by whom they are hotly hunted, either for the sake of their flesh, or that he may tame them for his own uses. The fierce nomadic tribes of the Black Sea and the Caspian, and of Central Asia, have no other breeding-ground than the steppes which they inhabit. Thither repair the Mongol and the Cossack, the Kirghis and the Kalmuck, to select their chargers. They capture them with the lasso, which they throw with wonderful dexterity; and in a few days the captured animals are comparatively docile. When in want of their hide or flesh, the nomads hunt them with gun, arrow, and spear.

They treat their domesticated horses, however, with kindness, and sacrifice them only in the hour of urgent need. With them, as with the Arabs, the horse becomes

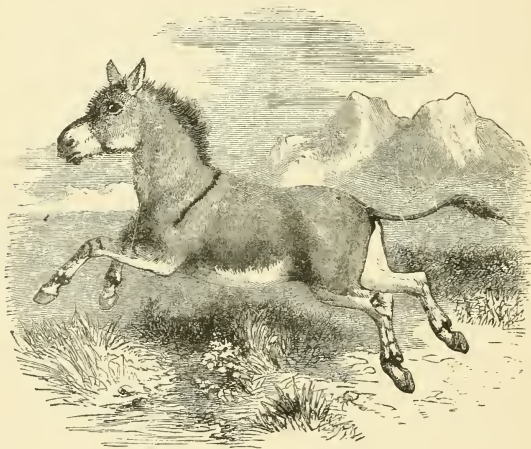
a friend rather than a slave ; in truth, he is one of the family, and his master never parts with him if he can help it. Modern travellers describe the horsemen of the steppes as almost realizing the old fable of the Centaurs. The harsh conditions of their precarious existence compel them to be constantly upon horseback : *there* is their home, their dwelling-place, their safety, and their ease ; there they are mounted day and night ; in the saddle they sleep, prepare their food, and enjoy their rude repasts. Rude, indeed, and not calculated to gratify the appetite of a European epicure ! The nomad takes a reeking slice of meat, puts it between his saddle and his horse's back, rides away merrily on his mission of war or pleasure, and in this strange oven leaves it for a few hours, until the heat, pressure, and friction have served in some degree to cook it ! Then a pinch of salt for seasoning, and he devours his viands as if they were the daintiest dish ever manufactured by a Carème or a Francatille !

The horse is for the nomad an inestimable treasure. He shares with him the fatigue of the campaign and the glory of the battle ; he carries him across the dreary wildernesses ; he nourishes him with his flesh, and the mare quenches his thirst with her milk. In the dairies of the Kirghis mares take the place of the cow, and are milked regularly once or twice a day. The milk is drunk warm as a medicinal potion. It is thicker and contains more saccharine matter than that of the ruminant animals ; hence, when duly soured, it supplies a strong vinegar, or, when fermented, an intoxicating alcoholic beverage. To this drink, called *koumis*, the nomads are exceedingly partial, and a

man's wealth is estimated by the quantity he is able to supply.

Next to the horse we naturally place the Ass, which also, on the boundless steppes, enjoys a life of liberty.

His swiftness is so great that he cannot be overtaken even by the swiftest Arab, and on rocky ground he defies pursuit. Not even the greyhound can successfully pursue



WILD ASS.

him when he gets clear of the level country. Hence he is a favourite object of chase with the hunter, who endeavours to drive him among the mountains, and bring him down with a well-aimed bullet when he stands in fancied security on some rocky crag.

The Onager is a handsomer animal than the tarpan, or

wild horse. It is difficult to believe that he comes of the same kind as the depressed and weary-looking ass of civilization, the beast of burden, which has borne for so many years the jests of the scoffers.

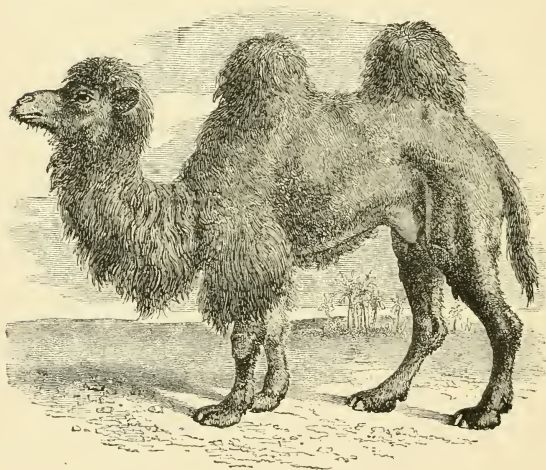
He lives in very numerous troops, and migrates from north to south, and south to north, according to the season. The Tartars employ him chiefly in the saddle. They eat his flesh, preferring it to that of the wild horse.

Even the domestic ass of the East, we may here observe, differs widely from the slow, obstinate, and degraded animal of European notoriety. Under a favourable climate, and treated with kindness and consideration, he has preserved his original vigour, sleekness, pride of aspect, and haughtiness of bearing. The wealthy and illustrious do not disdain to use him as a charger, or to harness him to their carriages. He has a quick bright eye, a keen scent, a sure foot, and a gentle but resolute aspect. He accomplishes easily from six to eight miles an hour; and while the life of the European ass seldom exceeds fifteen years, that of the Asiatic counts its thirty or thirty-five. He is less subject to disease than the horse, and is scarcely inferior to the camel in those qualities of endurance and sobriety which make the latter so valuable.

Ass's milk is used as well as mare's milk for the production of that favourite beverage of the nomad to which we have already alluded, the koumis. Mr. Atkinson describes the large leathern koumis sack or bottle as an indispensable portion of the Mongolian equipment. Usually it measures about five feet and a half in length, and four feet five inches in width; and it is provided with a tube at the

corner, four inches in diameter, through which the innocent milk is poured into the bag and the intoxicating koumis drawn out. A wooden instrument, not unlike a churning staff, is thrust through this tube, and the milk is frequently stirred for a period of about fourteen days; the fermentation is then complete, and the koumis fit for use.

The Camel of the steppes—that is, the *true* camel, as distinguished from the Arabian camel or dromedary—has



CAMEL OF THE STEPPES.

two humps forming “a storehouse of solid nutriment, on which he can draw for supplies long after every digestible part has been extracted from the contents of the stomach :

this storehouse consists of one or two large collections of fat, stored up in ligamentous cells supported by the spines of the dorsal vertebræ. When the camel is in a region of fertility, the humps grow plump and expanded; but after a protracted journey in the wilderness they become shrivelled and reduced to their ligamentous constituents, in consequence of the absorption of the fat."

The two humps of the camel, however, are smaller than the one of the dromedary. Nor is he capable of so much endurance: while the Arabian camel can exist without water for six or even seven days, the Bactrian requires to renew his supply in three. He is somewhat taller in stature, however; while his colour is generally a dull brown, sometimes verging upon black, sometimes paling into a dingy white. In all other respects,—in his general conformation, in the long neck which raises his head high above the hot and dusty soil, in the valve-like nostrils that close instinctively against the minutest grain of sand, in the wide cushion-like feet so well adapted for treading the irregular surface of the desert,—we see that he is eminently fitted for his "mission" as the beast of burden of the waste and the wilderness; able to accomplish long journeys without fatigue and without feeling the need of frequent refreshment.

In the high plains and table-lands by which the Eastern steppes attain to the lofty level of Tibet we find the Kiang, or Wild Ass; sometimes, though erroneously, called the Wild Horse, because its call resembles the equine *neigh* more than the asinine *bray*. It is a large animal, measuring

fourteen hands at the shoulder, when full-grown; and capable of traversing great distances at a very considerable speed. A warm and woolly coat, which changes its colour and its thickness according to the season of the year, enables it to brave a rigorous climate, and to ascend to remarkable altitudes: Lieutenant Strachey discovered it on the banks of the sacred lake of Manasarowar, at an elevation of 15,250 feet. It lives in little troops of from eight to ten individuals, and is a wary and suspicious animal.

Goats in Eastern Asia are very numerous, both as species and as individuals. In the more elevated plains they find the two conditions essential to their welfare,—a cool climate, and an abundance of herbage. A swift and agile animal, bold and vivacious, the goat loves the rocky solitudes and desert places, where it can climb the steep ascent or spring from crag to crag, exulting in its freedom.

The Kashmir Goat may be mentioned here, for the sake of convenience, though it does not strictly belong to the steppes. It is a native of Tibet and the mountainous countries of Central Asia. Its fame is due to the excellence of its fur, which is imported into India, and woven into the beautiful Kashmir shawls. This fur is of two kinds; an outer covering of long silky hair, and an undercoat of soft grayish wool. It is from the latter that the much-prized shawls are manufactured.

By a natural transition we pass from the horned goats to the horned sheep, among which the Argali stands conspicuous. It is nearly as large as an ordinary ox, standing

four feet high at the shoulders. Its horns are about the same length; that is, they measure nearly four feet if taken along the curve; at their base they are about nineteen inches in circumference. "Firmly," we are told, "as these weapons are fixed upon the animal's forehead, they are sometimes fairly broken off in the fierce conflicts which



ARGALI.

these creatures wage with each other when they fight for the possession of some desirable female. These broken horns are not suffered to lie unobserved on the ground, but are soon utilized by the foxes and other small mammalia which inhabit the same country, and converted at once into dwelling-houses, where they lie as comfortably as the hermit-crab in a whelk-shell. Man also makes use of these

horns, by converting them into various articles of domestic economy."

The Moufflon, generally considered to be the original stock of our domestic sheep, prefers the "difficult air" of the mountain-tops, but is to be found in the great central plains. In size it may be compared to a small fallow deer; but though clothed with hair instead of wool, he bears a closer resemblance to the ordinary ram than to any other animal. In summer the hair is close and straight; in winter it becomes rough, wavy, and even slightly curled. Its colour is brown on the upper part of the body; but on the under parts, and inside the limbs, the brown fades almost into white. It is much longer about the throat, and about the neck and shoulders, than anywhere else. The moufflon is almost as active as the goat, and is not less remarkable for strength of limb and sureness of foot.

From goats and sheep we are carried onwards to those most graceful of ruminants, the Cervidæ, or Deer.

On the eastern side of the Ural, in the wooded borderlands of the steppes, we find the common European Stag. The Ahn, or roebuck of Tartary, inhabits the valleys and plains which lie northward of the snow-capped Himalaya, and extend along the base of the Thian-Shan mountains. Various species of deer wander freely in troops, or in isolated couples, across all the temperate and fertile portions of the steppes; while the Elk, or Moose, which has been already noticed as an inhabitant of the North Amer-

ican continent (page 40), is spread over the whole of Asia between the 40th and 45th parallels of latitude.

The Saiga Antelope is also an inhabitant of the steppes. In Eastern Europe he ranges from Poland to the Caucasus; in Asia, from Persia to Siberia. He is of moderate stature, and somewhat ungraceful in appearance; a gregarious animal, assembling in herds of many thousands, and migrating towards the south at the approach of winter. He is hotly pursued by the hunter for the sake of his horns, which are hollow, semi-transparent, lightly-coloured, and gently twisted. The skin is also valued, and that of the young animal is employed in the manufacture of gloves.

We find among the animals of the steppes two species of rodents: the Varying Hare, so called because the colour of his furry coat changes from tawny gray in summer to snow-white in winter; and a gray Squirrel, which seems to be simply a variety of our common European squirrel. But he is not, like his congener, a climber and a haunter of the woods. He abounds in the Mongolian steppes, where he lives in subterranean burrows, like the cat and rabbit. He shows, however, much greater ingenuity than any other troglodytic rodent; for he covers the entrance to his domicile with a vaulted roof, dexterously constructed of dry herbs woven together, and covered with clay. His erections, in fact, bear a resemblance to the works accomplished by some of the moles.

Carnivorous animals are not abundant in the Eastern

plains,—where, indeed, they would find a lack of sustenance. Of the Felidæ, or Cat family, the representatives are neither numerous nor various. Except a species of lynx, the Chiluson, or Chulon, which has been discovered in the north of Tartary, and a few tigers which range as far as Mongolia, the European and Asiatic steppes know nothing of these formidable mammals. The most dangerous, we may even say the only dangerous, carnivore which man and the herbivorous animals have cause to dread is the grim, furtive, and ferocious Wolf. In Western Europe the wolf is now very rare, having been ceaselessly and pitilessly hunted down; but he is still found in great numbers in the savage Lithuanian forests, in Russia, and in Central Asia.

Like the jackal, he is not without his use in the economy of Nature, though his cruelty renders him an object of hatred in every country which he inhabits. That he will rifle the graves and profane the bones of the dead, is true; but he also clears away carrion and offal. He follows up the track of the wandering herds, and disposes of the weak, the wounded, and the dying. He is the most useful (it has been said), though the most disgusting, of camp-followers, and is of essential service in regions where the half-civilized tribes are almost constantly engaged in hostilities with one another.

“I stood in a swampy field of battle,
With bones and skulls I made a rattle
To frighten the wolf and carrion crow
And the homeless dog; but they would not go:
So off I flew; for how could I bear
To see them gorge their dainty fare?”

The wolves of Tartary do not exhibit that fear of man

which is shown by those of Western Europe ; probably, because they are not so well acquainted with the power of firearms. It is as true now as when the Jesuit missionary Huc wrote the account of his remarkable travels, that the Mongolian wolf attacks man more willingly than any other animal : he will dash through a flock of sheep, without inflicting any injury, in order to pounce upon the shepherd. In the neighbourhood of the Great Wall, he says, they make frequent descents upon the Tartar-Chinese villages ; entering the farms, but turning aside with contempt from the domestic animals they encounter, to select their victims in the owner and his household. Not a village in Tartary but is called upon every year to deplore some calamity of this kind.

No wonder that the hunters of the plains pursue these ferocious beasts with an implacable hatred. The news that a wolf has been seen near an encampment is a signal for all the able-bodied males to mount their steeds and join in the chase ; and as each cavalier has always two or three saddled horses in readiness near his tent, the plain is speedily covered, as if by magic, with a cloud of eager hunters. The weapon used is a long rod, which is furnished with a long cord terminating in a slip-knot, something like a lasso. "Thus, in whatever direction the wolf may seek to escape, he encounters a band of determined adversaries, whose cry, as they precipitate themselves upon their traditional foe, is, 'No quarter!' There are no mountain-sides so rugged or so difficult that the nimble horses of the Tartars cannot pursue him thither. The cavalier who finally overtakes the beast flings a lasso

round his neck as he passes at full gallop, and drags him in his rapid track to the nearest tent. There they



TARTAR MODE OF CATCHING WOLVES.

firmly bind up his muzzle, that they may proceed to torture him with impunity, closing up the tragic scene by flaying him alive, and then setting him free. In the summer the miserable animal will live in this condition for several days ; but in winter, exposed without his furry coat to the

rigour of the season, he dies almost immediately, frozen to death.

Two other species of the Canidæ, the Korsak and the Karagan, are eagerly hunted by the Tartars, especially by the Kirghis tribes. But the chase, in this instance, is carried on with a commercial object, the fur of these animals being very valuable, and thousands being sold every year at the great market of Oldenburg. The korsak would seem to be a kind of fox. In colour he closely resembles the jackal, but his long tail terminates in a black tuft, and on either side of the head a brown streak extends from the eye to the muzzle. He is found over all the wild steppes of Tartary, and lives in a burrow, like his vulpine congener. It is a "vulgar error" to say that he never drinks. He is a handsome animal, and when, towards the close of the sixteenth century, several living specimens were brought to Europe, he acquired quite a fashionable reputation. All the great ladies of France showed a desire to possess the new favourite, which they admitted into the household, and in their daily promenades led about like a pet dog. The mania did not last long, but it showed, at all events, that the animal could be easily domesticated.

BIRD LIFE IN THE STEPPES.

The Bird World of the plains is comparatively limited, both in species and individuals. Its principal members are some migratory Palmipeds, a few Gallinaceæ, and a few rapacious birds. The fruit-eating and insect-eating birds must necessarily be absent from a region which is deficient

in trees and vegetation generally. The shores of the three seas, the Euxine, the Caspian, and the Sea of Azov, as well as the banks of the rivers that flow into them, and the neighbouring pools and marshes, are peopled by countless gulls, wild ducks, herons, curlews, and pelicans. The Cossack and Kalmuck chiefs, who retain the love of falconry that animated their fierce ancestors, hunt these birds with considerable eagerness; and a time may come when in Eastern Asia the heron will be as rare as it is in England.

The Herons belong, zoologically speaking, to the order *Grallatores*, or *Wading-birds*. Their numerous species frequent the marshy portions of the steppes in the neighbourhood of the seas already mentioned. There the picture presented to the traveller's eye frequently recalls the poet's graphic lines :—

“O'er yonder ample lake the while,
What bird about that wooded isle,
With pendent feet and pinions slow,
Is seen his ponderous length to row?
'Tis the tall heron's awkward flight,
His crest of black, and neck of white,
Far sunk his gray-blue wings between,
And giant legs of murky green.”

The most notable species is, we think, the Great White Heron, which, with his long bill, long and slender limbs, and black feet, stalks about arrayed in plumage of snowy white. He measures about forty inches in length. On the nape and croup are long flexible feathers, wavy, and with tapering ends, which are much valued for the purpose of personal decoration.

Scarcely less handsome is the Purple Heron, which builds his nest among the reeds and rushes of the swamp: and even the common or Gray Heron presents many characters of interest. His food consists principally of fishes, which he captures by standing patiently in the water until they come within his reach, when immediately he extends his long neck, and secures and swallows a luckless victim.

The Great Bittern, easily recognized by his peculiar booming voice, is a bird of considerable size, measuring about thirty inches in length. Though the back of the neck is almost naked, the feathers on the sides and underneath are very full and capable of being erected, so as to give the neck an appearance of great thickness.

The plumage of this "bird of desolation" is of a pale yellow, varied by brown and gray zigzag patches and scattered tints. He is a bold and even ferocious bird, striking with keen bill at his antagonist's eyes. When attacked by dogs or other carnivorous animals, he throws himself upon the ground and fights desperately, with claws and bill, to the very last.

The Curlew reminds us in many particulars of the ibis of Egypt. His cry is wild, loud, and melancholy, and on the eve of a great storm, when sounding across the foamy estuary or tumultuous sea, it comes upon the mariner's ear with a painful effect. The curlew is a sociable bird, and, congregating in numerous flocks, dwells on the shores of sea and lake, or on the borders of marsh and swamp, feeding upon worms and molluscs. When the breeding-season

approaches, they separate into pairs, and retire to the savage hills and the unfrequented recesses of the dreary moorlands :—

“ Remote from human sight,
In lonely pairs their vernal flight
They speed o'er heathy mountain rude,
Or some waste marsh's solitude,
To the tall grass or bristling reed
Their wild unnestled young to breed.”

Fable and poetry have done their best to immortalize the Pelican, which has long been a favourite emblem of maternal devotion. The distinctive characteristic of this well-known bird is the bright yellow membranous pouch attached to the lower mandible of the long and powerful bill. This pouch will hold a considerable number of fish, and thus enables the bird to store up any superfluous quantity which may be taken during fishing excursions, either for her own consumption or for the sustenance of her young. In feeding the nestlings,—and the male, it is said, supplies the wants of the female, when she is sitting, in the same manner,—the upper mandible is pressed against the neck and breast, in such wise as to assist the bird in emptying the capacious pouch ; and during this action the *red nib* of the upper mandible seems to come in contact with the breast. In this way, we may surmise, originated the fable that the pelican nourishes her young with her blood, and the attitude in which the imagination of painters has placed the bird in the Emblem Books, with the blood issuing from the wounds made by the terminating nail of the upper mandible.

Bishop Epiphanius, at a very early date, recorded the



PELICANS FISHING.

following fable :—"Beyond all birds," he says, "the pelican is fond of her young. The female sits on the nest, guarding her offspring, and cherishes and caresses them, and wounds them with loving; and pierces their sides and they die. After three days the male pelican comes and finds them dead, and very much his heart is pained. Driven by grief he smites his own side; and as he stands over the wounds of the dead young ones, the blood trickles down, and thus are they made alive again."

Shakespeare has several allusions to the legend in its better-known form. Thus, Laertes says :—

"To his good friends thus wide I'll ope my arms;
And like the kind life-rendering pelican,
Repast them with my blood."

It is generally in the gray of the dawn or in the dusk of the evening that the pelicans gather about the savage shores to seek their food in sociable companionship. They proceed, as Nordmann points out, in a systematic fashion, which is apparently the result of mutual deliberation. Having selected a favourable situation, such as a shallow bay with a smooth bottom, they group themselves in a kind of half-circle, with bills turned towards the ground, and at a distance from one another of ten or twelve feet. With their wings they beat the water hurriedly, and sometimes plunge in up to the middle, gradually returning towards the beach, and driving the fish before them into a sufficiently narrow channel. Then the feast begins; and so abundant is it as generally to attract and satisfy a crowd of other but less ingenious birds. Thus Nordmann, on one occasion, counted as many as forty-nine pelicans fishing in

concert on the shores of the Black Sea. Besides these forty-nine, he says, on the weedy heaps cast ashore by the tide were assembled hundreds of sea-mews, sea-daws, sea-swallows, and the like, preparing to snatch the fish out of the water, and to divide amongst themselves the remains of the banquet. Finally, several grebes swimming in the area enclosed by the belt of fishers, while the space was still sufficiently broad, played their part at the welcome feast, frequently plunging after the scared and terrified fish.

The Asiatic plains are tenanted by numbers of bustards and grouse, or heather-cocks. Thither, too, in quest of carrion or of living prey, resort countless flights of crows and other birds of predatory habit. Travellers speak also of a black eagle, which the Mongols and Kalkas train to hunt the moufflon, the wild goat, and the saiga antelope. It is probable, however, that this is not an eagle properly so called, but rather the ubiquitous black kite, which rises so proudly on strong plumed wings,

“And hunts the air for plunder.”

To Central Asia, however, belong several species of eagles, buzzards, hawks, and falcons. They live very peacefully in the waste solitary places, with no hand to molest them; and so little fear do they entertain of man, that they boldly enter the encampments of the nomads, and carry off a portion of their provisions. An incident of this nature is described by the Abbé Huc, who on one occasion had seated himself, along with his travel-

ling companions, to sup on a quarter of a kid prepared by the skilful hands of a Tartar cook :—

“We had just planted ourselves,” he says, “in a triangle on the grassy sward, having in our midst the lid of the pot, which served instead of a dish, when suddenly we heard a noise like thunder over our heads. A great eagle darted down upon our supper, and rose again with arrowy rapidity, carrying off in his claws some slices of kid. When we had recovered from our surprise, we could do nothing but laugh at the adventure. However, our Tartar follower could not laugh—not he ; but was exceedingly angry, not so much on account of the stolen kid, as because the eagle, in flying off, had insolently struck him with the tip of his wing.”

CHAPTER VI.

THE ARABIAN PENINSULA ; PALESTINE ; AND SYRIA.



PORTION of the Arabian peninsula lies in the North Temperate Zone.

The central part is a table-land of moderate elevation, as yet but imperfectly explored. To the south extends a Tropical desert of burning sands ; to the north a hilly and even mountainous region is intersected by beautiful valleys, blooming with palm-groves, bright with streams, and capable of successful cultivation.

Leaving the Arabian peninsula, we enter upon the lower levels of the Syrian Desert, which is broken up by several low ridges of limestone. Beyond lies Syria proper, divided by the famous Lebanon mountain-range into two narrow plains or valleys. The Lebanons are connected with the snow-clad Taurus by the well-wooded mountain-isthmus of Gawoor, the ancient *Amanus*, which is absolutely impassable except through the two historic defiles of the Amania and Syrian Gates.

The name "Lebanon" signifies *white* ; and was given either in allusion to the snow which whitens the mountain-

tops for a great part of the year, or on account of the white colour of the peaks and precipices.

In this range the backbone, or central ridge, has smooth and naked sides, wholly destitute of verdure, and rugged with knolls and jutting points of rock. The line of cultivation runs along at a height of about 6000 feet, and below this line the aspect of the western slopes is exceedingly romantic. Precipices and towering crags have been moulded by the elemental wars of centuries into shapes of extraordinary boldness and diversity. Rugged ledges are here and there relieved by the fresh verdure of the evergreen oak, or by clumps of tall fresh pines. The patches of soil between these are sedulously tilled, and reward the industry of the labourer with crops of figs, mulberries, and grain; while the terraces are purple with festoons of vines, and the glens umbrageous with dense groves of olives. The cedars for which the Lebanon was once renowned are now reduced in number: the forest has dwindled to a single group; a group of between three and four hundred. The traveller who wishes to visit them ascends from the Maronite village of Ehdeu, in the valley of the Kadisha. A wide view opens up the long terraces of the moraines of ancient glaciers descending into the valley. Here, says Dean Stanley, a slip of cultivated land reaches up into the verge of their desolate fields. Behind is a semicircle of Lebanon's highest summits. Just in the centre of the view, in the dip between the moraines and the snow-clad hills behind, is a single dark massive clump; the sole spot of vegetation that marks the mountain wilderness. This is the Cedar Grove—literally on the very edge of the height of Lebanon;

standing as if on an island eminence, broken into seven lengths, of which six are arranged round the seventh, a square mount in the midst, on which stands a rude Maronite chapel. The variation of tint and outline thus makes the whole group a kind of epitome of forest scenery. The outskirts of the eminence are clothed with the younger trees, which have sprung up within the last two centuries, and amount to more than three hundred. In the interior flourish the patriarchs of the grove, about twelve in number. Their forms are such as must always have impressed the imagination of the observer, and have suggested the ideas of regal strength, solidity, and majesty.

In the valleys of the Lebanon wild beasts are numerous. The eagle and the vulture build their nests on the beetling cliffs; herds of wild swine frequent the woods; and large companies of gazelles revel in the unbounded freedom of the bare eastern steppes. The higher peaks and more secluded glens are in both ranges of the Lebanon the haunts of wolves and bears and panthers, and of hyenas and jackals, which render night horrible with their discordant cries.

How striking the contrast when we descend into the valleys and plains of Syria, which a genial climate and a fertile soil load with vegetation! The plain of Damascus is one of the gardens of the world. Filled with sweet odours, and shining with bright waters, it lies like an oasis in the heart of dreary wastes, the barren monotony of which is varied only on the east by the shattered marbles and ruined temples of Tadmor and Palmyra. No rival, indeed, to the Earthly Paradise which has so often fired

the imagination of the Oriental poet is to be found along the eastern side of the mountains, because they give forth no other stream comparable to the Barada in copiousness ; but a certain amount of land has been recovered from the desert, where the corn-crops are sufficient to recompense the toil of cultivation, and olive-groves are abundant.

Drear and naked is the appearance of the country as we approach Palestine ; though some of the mountains—as Carmel, Bashan, and Tabor—are richly wooded, and many of the valleys are green spots in the wilderness. Particularly is this the case with the valley of the Jordan, with its groves of noble trees, its thickets of oleanders, its clumps of fragrant shrubs, and its gardens of rose and balsam. One side of the Lake of Tiberias presents the very abomination of desolation ; on the other, the hills are gentle, the vales soft, silvan, and romantic, and the dells enriched with the palm, the olive, and the sycamore, trees which have suggested so many striking images and apologues to the sacred writers. The Holy City itself stands on a declivity, “encompassed by seven stony mountains, wild and desolate.” Farther south the dreariness increases ; the valleys grow narrower and bleaker ; the hills more sterile and gloomy ; until, beyond the Dead Sea, we come once more upon the solitude and silence of the Desert.

ANIMAL LIFE IN PALESTINE AND SYRIA.

Though carnivorous animals are numerous in the Lebanon, it is as individuals and not as species. The central mountains, however, are still haunted by the cruel and crafty panther ; and jackals and foxes are common. The

Syrian bear, though often regaling himself upon animals, is described as particularly fond of certain kinds of vegetable food, and more especially of the chick-pea, among the crops of which he commits terrible depredations. His furry coat is of a light brown colour; and the upper part of his neck bears a mane of thick, stiff hairs, which increase in length towards the shoulders. This mane terminates about the centre of the back.

Though in the Biblical age lions must have been of frequent occurrence in Palestine, from the numerous allusions to them in Holy Writ, they are now extinct.

Very rare is now the Daman or Syrian Hyrax, which is



CONIES.

supposed to be the cony of Scripture. Its body is about twelve inches in length, and twelve in height.

The damans are gregarious, selecting for their domiciles those inaccessible caverns and clefts in which the Syrian precipices abound. When the sun shines they come forth, and take up their position on the crags and ledges, where they can bask in its genial rays.

“The conies,” says Solomon, “are but a feeble folk, yet make they their houses in the rocks.”

The insectivorous animals are not numerous ; for, owing to the comparative deficiency of vegetation, insects are scarce, and the animals that prey on them would soon perish for want of sustenance. Hedgehogs and moles, however, are found ; and in Palestine, as elsewhere, do much damage to the crops by their extensive underground labours.

Among the rocks of Engedi still leaps the nimble ibex, the “wild goat” of our English Bible (Ps. civ. 18). The



WILD GOATS.

milk of the female, the flesh of the kid, and the long fleecy coat of the male are much esteemed.

The gazelle must also be included in the fauna of Pales-

tine, and is, indeed, the antelope of the country. In Arabia the natives hunt it with the greyhound and falcon. The fallow-deer is not uncommon.

Of domestic animals we need mention only the Arabian or one-humped camel, the ass, the horse, and the mule, all of which are in general use. The buffalo is generally employed for ploughing and draught purposes, on account of its strength; for the native cattle are small, and incapable of continued exertion.

BIRDS OF PALESTINE AND SYRIA.

We now come to the Birds of this celebrated region.

The Birds of Prey are represented by vultures, eagles, falcons, kites, and owls of different kinds, of whose habits it is superfluous to attempt a description, they are so well known. Water-birds in numerous companies haunt the shores of the lakes and the banks of the rivers—wild ducks, swans, gulls, sea-swallows, curlews, herons, and pelicans.

The Arabs call the pelican “mjah,” and sometimes “jemel el bahr,” that is, “sea-camel;” a word which admirably describes its manner of carrying the head with the neck in a kind of double arch. Mr. Macgregor, in his “*Rob Roy on the Jordan*,” gives a stirring account of a pelican hunt which he undertook in his famous canoe at the mouth of the sacred river.

Little covies of wild ducks, he says, bobbed about on the sunny wavelets, or the shy ones dived, or the wary took wing. Now and then pelicans sailed by on the air in solemn silence, and sea-gulls skimmed the reedy shores of scattered isles. At one pretty bay on the deep green

papyrus margin he came upon a group of half-a-dozen pelicans swimming together in amiable companionship. The desire to capture a pelican seized him irresistibly; but how was he to fulfil it with only a small pocket-pistol? "Nothing venture, nothing have;" and he cautiously "stalked" them round reeds and tiny islets, until he could get a tolerably certain aim. At the shot five birds rose majestically into the air, but the sixth remained floating on the wave. Vigorous were his efforts to rise, but fruitless; for as he had but one wing with which to beat the air, at every attempt he fell sideways again on the water. Mr. Macgregor quickly reloaded his pistol, but with his last bullet, and this it was necessary to economize. He knew it would be no easy task to kill so powerful a bird. His struggles might capsize the *Rob Roy*; or with his strong beak he might smash the cedar deck, or wound her captain's face. Besides, what was to be done with him when dead?

Mr. Macgregor resolved, therefore, that the doomed bird should carry his own big body all the way to the camp, by chasing him towards it while he swam. And then both prepared for the chase.

The pelican, as a preliminary, disgorged a volley of small fish from his beak; Mr. Macgregor adopted the reverse plan, for he placed his usual lunch on the deck before him, and ate it luxuriously at intervals, while he chased the poor pelican for an hour and a half. The latter soon discovered his adversary's tactics, and swerved right and left to get back to the safety of his reedy covert; but his pursuer always headed him, like a greyhound coursing a

hare, while careful never to come within reach of his beak, lest he might be driven in desperation to attack the canoe.

"Our camp," says Macgregor, "had been moved down to Almanzeh, and our men there wondered to see the *Rob Roy* coming slowly from afar, and very crooked in her course, with something white in front of her bow, which seemed in the distance to be a foaming wave. When near the camp, I rushed in quickly to get the double-barrel, and then went off again to the pelican, who meantime was far on his way to some reedy home. There was only small shot in the gun, and that could not penetrate his feathers. But at length I chased him ashore; and he was soon enveloped in an Arab cloak, fighting bravely all the time. His wing measured four feet six inches, which, allowing for the body, would give about ten feet of stretch between the two tips."

In the sayings and parables of our Lord we find frequent allusion to the abundance of the bird life of Palestine; and the countless birds of all kinds, the aquatic fowl by the lake-side, and the host of partridges and pigeons hovering above the fertile plain of Gennesareth, still remind the traveller of the "birds of the air" which "came and devoured the seed by the wayside," or took refuge in the luxuriant branches of the mustard-tree. The air echoes with the sweet strains of several species of warblers; while the exquisite Palestine nightingale, long before sunrise, pours forth its lyric melodious outbursts from the thickets which fringe the banks of the Jordan.

The Dalmatian Nuthatch is also a sweet singer. This is

a vivacious bird; and it is interesting to watch him running about quickly on the rough bark of his favourite trees. His food consists partly of insects, caterpillars, and other animal matters, and partly of berries and nuts. 'To the peculiar way in which he contrives to crack the latter he owes his popular name. He fixes the nut in a crevice in the bark of a tree, then moves round and round as if to select a suitable point of attack; and having chosen his position, and secured himself firmly by the grasp of his powerful feet, he proceeds to hammer at the nut with his strong bill, and this so steadily and effectually that he will soon break through the largest shell.

The female sits upon her eggs with such assiduity that no persecution will induce her to quit them. Her nest she defends to the last extremity, striking at the intruder with her bill and wings, and making a hissing noise; and when all her efforts fail, she suffers herself to be captured rather than voluntarily abandon her charge.

In this rapid enumeration we must not pass over the beautiful Palestine Sun-bird; one of a family which resembles the humming-birds in their general habits, and almost equals them in brilliancy of plumage. It is a sight to see these dainty creatures hovering on bright wings in the transparent air, while thrusting their long and slender bills in the corolla of the honeyed flowers from which they sip their sweets.

Dr. Arthur Adams, the naturalist, says:—"These birds are ethereal, gay, and sprightly in their movements, flitting briskly from flower to flower, and assuming a thousand

lovely and agreeable attitudes. As the sunbeams glitter on their bodies, they sparkle like so many precious stones, and exhibit at every turn a variety of bright and evanescent hues. As they hover round the honey-laden blossoms, they vibrate their tiny pinions so rapidly as to cause a slight whirring sound, but not so loud as the humming noise produced by the Trochilidæ. Occasionally they may be seen clinging by their feet and tail, busily engaged in rifling the blossoms of the trees. I well remember," he adds, "a certain dark-leaved tree with scarlet flowers that especially courted the attention of the sun-birds, and about its blossoms they continually darted with eager and vivacious movements. With this tree they seemed particularly delighted; clinging to the slender twigs and coquetting with the flowers, thrusting in their slender beaks, and probing with their brush-like tongues for insects and nectar, hanging suspended by their feet, throwing back their little glossy heads, chasing each other on giddy wing, and flirting and twittering, the gayest of the gay. Some were emerald green, some vivid violet, and others yellow, with a crimson wing."

Next we must ask the reader to notice the Hoopoe, which is not an uncommon visitor to our own islands, and is found in most parts of Temperate Europe. His favourite habitat is a wood bordering on a marsh or swamp, where, among the bushes and reeds, and decayed stumps of trees, he finds his insect food. He builds his nest of a few roots of grass, mixed with feathers, and conceals it in the hole of a tree. He feeds on grubs and worms as well as insects;

and in quest of these not unfrequently resorts to the towns and villages of Palestine and Syria, and even builds his tiny homestead in the immediate vicinity of human habitations. His flight is slow and undulatory, and performed in a series of jerks. It is sustained by quick, smart strokes of the wing.



HOOPOE.

Round about Lake Tiberias, and in the marshes above El-Huleh, kingfishers are numerous. The jay of Palestine occurs in some of the wooded districts ; nor are specimens wanting of the raven and the carrion crow. As Nature seldom supplies the bane without providing the antidote, she has created the locust-bird, or rose-coloured pastor, to keep down the increase of one of the most destructive of the insect tribe. This useful bird is of the same size as the starling, or about eight to nine inches in length. Its plumage is of a delicate rosy hue about the body, while the head, neck, wings, tail, and limbs are of a bluish black. It feeds upon worms, insects, and grain ; and in some places, owing to the great quantity of locusts it destroys, is regarded almost as a sacred bird.

REPTILES IN PALESTINE AND SYRIA.

Several kinds of lizards occur in Palestine; and in ruined walls is very common the *Lacerta stellio*, or *Hardun* of the Arabs, which the Turks kill, from a curious idea that it mimics them saying their prayers. The sand lizard is also abundant; a slender, active, harmless, swiftly-moving little creature, which loves to bask in the noontide warmth, and shows its sense of gratification by gentle undulations of the tail. The lizard is often spoken of in the East as the friend of man, because it never retreats from him, but apparently regards his approach with pleasure. It passes the winter in a torpid state, at the bottom of a small burrow which it excavates in the soil; but the first warm airs of spring awaken it to vigorous life, and it sallies forth to seek its mate. It feeds chiefly upon insects, and more particularly upon flies.

The Chameleon is also common; that well-known lizard, whose property of changing its colour has been so often used

“To point a moral, and adorn a tale.”

The superstitions which prevailed respecting it in days of old were very strange. It was supposed to change its shape very often, and that it had no fixed colour peculiar to itself. Plutarch asserts that it takes every colour in turn but white; Aristotle, that it changes colour all over the body; Ælian, that when it disguises itself in any other colour but gray, it embellishes only a portion of its body.

The body of the chameleon is rather slender; an angular

head rests on a short thick neck ; the tail is round and prehensile. The globe of each large, prominent eye is covered with a single shagreen-like eyelid, which the animal can contract or dilate at will ; and through a small slit in the centre can be perceived a quick and vivid eye-ball. Thus, the chameleon's eyes are completely enveloped, as if unable to endure any glare of light. Moreover, they



CHAMELEON.

are mobile to a degree. The mechanism which controls them is such that they can both be directed on the same or on separate objects ; and sometimes they are so turned that one looks backward and the other forward, or while one looks at things above the other gazes on things below. This explains the French saying, that the chameleon can look into Champagne, and see Picardy in flames.

Not less wonderful than the eye is the tongue of this interesting animal. It is cylindrical in shape, about six inches in length, and terminates in a fleshy, dilatable, and somewhat tubular tip, covered with a glutinous secretion that enables the chameleon to seize its insect food and draw it towards its mouth. The five toes of each foot are wrapped round and united together by a thick membrane, so as to divide them into a couple of groups; one containing three, and the other two. Each toe is furnished with a long and strong hooked claw. Hence, instead of creeping along the ground like the lizard, the chameleon dwells among the trees, and grasps the branches with one group of fingers before and the other behind, in the same manner as the parrot or woodpecker. It is further fitted for an arboreal life by its long prehensile tail, with which it can swing itself from a bough like a monkey. It is to be observed, however, that all its movements are slow and deliberate; it does not sport among the trees like a squirrel, but shows more of the proverbial slowness of the sloth. On the ground it walks with a curiously grave and dignified gait, as if it were marching in some solemn procession.

But this slowness of locomotion does not prove any obstacle to its capture of the insects on which it feeds, owing to the rapid motions of its tongue, and the arrangement of its eyes, which enables it to discover its prey at a considerable distance and in all directions. When about to seize a victim, it rolls round its eyeballs until their gaze is directed full upon it. Then, as soon as it comes within reach of the tongue, that wonderful instrument is aimed at

it with a precision that never fails, and is drawn back into the mouth with its prize adhering to its viscous tip. This tongue can be extended to a length equalling, and sometimes surpassing, that of the creature's body.

Another characteristic of the chameleon is connected with its skin. This is not adherent everywhere to the muscles, and into the occasional *blanks*, or empty spaces, the air penetrates, so that at the creature's will its skin heaves and swells like a rising wave. This skin contains two layers of membranous colouring matter, placed one above the other, but arranged in such a manner that they may both show at once under or through the cuticle, or that one only may appear, or that the cuticle shall temporarily disappear under the superficial pigment. To this peculiarity is due the remarkable variation of colour which distinguishes the chameleon, and has rendered it proverbial: at times it seems of a whitish, at others of a greenish hue, or the shade may be red, yellow, and even black.

In speaking of the reptiles of Palestine, a recent writer remarks that the crocodile does not occur; but Mr. Macgregor met with a specimen in the course of his canoe-voyage down the Jordan. He was exploring the Kishon, one of the tributaries of the Mediterranean, and, when near the southern bank, suddenly heard a strange sound quite near him; a measured breathing, gurgling, hissing sound. After this had been repeated, he quickly turned round to discover, if he could, the cause. Judge of his surprise when, within a foot of his paddle, and close to his

canoe, he saw the nose and mouth of a crocodile ! For a second or two his eyes were fixed on this extraordinary apparition, as if spell-bound by a serpent's gaze. The nose was dark gray in colour, smooth and rounded, and projected above the surface. The mouth was open, and the water gurgled out and in.

"Not the slightest doubt," he says, "had I that this was the face of a crocodile, though from its position behind me in the muddy water, and because my head was low, I did not see its eyes. A crocodile's head had long ago been familiar to me, for I had seen, quite near, at least fifty of them on the Upper Nile. The manner of swimming also—with the nose out of water, and the mouth opened towards the flowing stream—was precisely what is so often noticed on the Nile."

Hastily rising from his seat, he grasped the paddle, but was doubtful what to do with it. If he struck the animal, it might lash its tail, and injure the frail canoe ; if he dipped the paddle gently, the motion would bring his hand close to the creature's mouth, and an unsophisticated crocodile would very probably snap at such a dainty morsel, though the more knowing ones of the Nile are shy, because they have learned by experience that men mean guns, and guns mean bullets, and bullets mean either death or disagreeable wounds. Cautiously, therefore, the voyager dipped his blade ; the nose and mouth disappeared, and the canoe dashed into the middle of the river. Afterwards, on examining the muddy bank, he discovered numerous footprints of crocodiles ; and from the evidence Mr. Macgregor collected, there seems no reason to

doubt that these reptiles are still to be found in the neighbourhood of the Mediterranean, and probably were at one time much more numerous than they are now.

We pass on to the Insects ; and among these the Locust claims pre-eminence, on account of its extraordinary powers of destruction. Allusions to locusts are frequent in Scripture, and we read in the Gospels of their being used as food ; and travellers tell us that in the East they still form a common article of diet. They are prepared in different ways : sometimes they are ground and pounded, and then mixed with flour and water and made into cakes ; or they are salted and then eaten ; sometimes smoked, boiled or roasted, stewed, or fried in butter. Dr. Kitto, after partaking of them, pronounces them as more like shrimps than anything else ; and other writers speak of them as by no means disagreeable to the palate.

Their numbers are extraordinary. “With the burning south winds of Syria,” writes Olivier, “there come up from the interior of Arabia and the southernmost parts of Persia clouds of locusts, whose ravages to these countries are as grievous and nearly as sudden as those of the heaviest hail in Europe. We witnessed them twice. It is difficult to describe the effect produced on us by the sight of the whole atmosphere filled on all sides, and to a great height, by an innumerable quantity of these insects, whose flight was slow and uniform, and whose noise resembled that of rain,—the sky was darkened, and the light of the sun considerably weakened. In a moment the terraces of the houses, the streets, and all the fields

were covered by these insects ; and in two days they had nearly devoured all the leaves of the plants. Happily, they lived but a short time, and seemed to have migrated only to reproduce themselves and die ; in fact, nearly all those we saw the next day had paired, and the day following the fields were covered with their dead bodies."

A district visited by one of these swarms appears afterwards to have been burned up by fire. They devour every green thing, every blade of grass, and leave the ground bare, withered, and dead. Possessing the faculty of inflating themselves with air, they are capable of accomplishing long flights at the rate of six leagues a day, laying waste all vegetation in their course. Woe to the countryside where they alight ! The husbandman watches their approach, as they come up from afar in innumerable bands, with aching heart, for he knows that the day of ruin is at hand. Wherever he turns he sees the sky black with their legions, and the soil seems to groan under the burden. Their millions of wings fill the air with a hoarse sound, like that of waters tumbling down a rocky precipice. The branches of the trees give way beneath the swarming thousands ; and in a few hours, over an area of many miles, all the life of the verdure has disappeared,—the wheat is gnawed to its very roots, the green boughs are stripped of their foliage. When nothing remains, the depredators rise, as if in obedience to some preconcerted signal, and wing their way to some fresh land of plenty, leaving behind them gloom, and desolation, and ruin.

The negroes of Soudan endeavour to divert the destructive inroad by the most savage yells. In Hungary artil-

lery was formerly employed for the same purpose. In the middle ages the Church was called upon to interfere, and priests exorcised them as if they were so many evil spirits. Alvarez relates, with much simplicity, the manner in which he employed his exorcisms against an immense locust-flight which he encountered in Ethiopia. He caused the Portuguese in his train, and the natives, to assemble in procession, chanting certain psalms. Thus they proceeded into a district where corn was growing; and there they caught a good number of locusts, to which Alvarez delivered a solemn adjuration, written and composed on the preceding evening, summoning, admonishing, and excommunicating them. Next he charged them in three hours' time to depart into the sea, or else to go to the land of the Moors, and no longer afflict a Christian region. And on their supposed refusal, he adjured and invoked all the birds of the air, animals, and tempests, to dissipate, destroy, and devour them; and for this admonition he directed a quantity of the locusts to be seized, and pronouncing his adjuration in their presence, that they might not pretend ignorance of it, he dismissed them to tell their congeners! It is unfortunate that Alvarez has not recorded the result of his curious experiment.

Of the nature of the havoc committed by the locusts we can give but one example. In 1866 Algeria was invaded by them. The inroad lasted for five months—from March to July—each day bringing up new swarms of depredators; and Henry Berthoud, then travelling in Algeria, saw a column of them whose passage began before daylight and had scarcely terminated at four o'clock in the afternoon.

Dr. Guyon refers to a flight which passed over the plain of Sebdon, occupying three hours in its passage. The locusts, finding nothing to devour in the desert, speedily returned, and made a descent upon the plain of Sebdon, which may roughly be computed as eight to ten miles in breadth. In four hours all the crops were destroyed, all the vegetation had disappeared. The locusts left behind them an infectious odour of putrescent herbs, produced by their excretions.

It has been remarked, says Mr. Tristram, that Palestine, in its physical character, presents, on a small scale, an epitome of the natural features of all regions,—mountainous and desert, northern and tropical, maritime and inland, pastoral, arable, and volcanic. This fact, which has rendered the Biblical allusions so rich and various as to afford familiar illustrations to the people of every climate, has had its natural influence on the zoology of the country. In no other district—not even on the southern slopes of the Himalaya—are the tropical fauna of so many distinct zones and regions brought together in such close juxtaposition. The bear of the snow-clad summits of Lebanon and the gazelle of the desert may be hunted within two days' journey of each other; sometimes even the ostrich approaches the southern threshold of the Sacred Land; the same echoes respond to the howl of the northern wolf and the cry of the tropical leopard; and while we are reminded of our English woodlands by the song of the linnet and the bunting, we are transported to the Bird

World of Asia and South Africa by the splendid plumage of the sun-bird and the glossy starling.

“Within a walk of Bethlehem,” says our authority, “the common frog of England, the chameleon, and the African gecko may be found almost in company; and descending to the lower forms of animal life, while the northern valleys are prolific in genera of molluscs common to Europe, the valley of the Jordan presents types of its own, and the hill-country of Judea produces the same type of snails as is found in Egypt and the African Sahara. So in insects: while the familiar forms of the butterflies of Southern Europe are represented on the plain of Sharon, the Apollo butterfly of the Alps is recalled on Mount Olivet by the exquisite *Parnassius Apollinus* hovering over the same plants as the sparkling *Thais* and the *Libythea*, northern representatives of subtropical lepidoptera.”

So great is the influence which the physical character of a country, and its climatic conditions, exercise upon the distribution and development of animal life.

CHAPTER VII.

ANIMAL LIFE IN WESTERN EUROPE.



OUR extensive survey is rapidly drawing to a close, and our examination of the principal regions of the Temperate Zone brings us at last to Western Europe and the British Islands. Here again we meet with a considerable variety of climate: Spain almost approaches the temperature of the Tropics, while some portions of Germany are visited by a winter of Arctic severity. Nor is there a less considerable variety of scenery. How wide the difference between the landscapes of Andalusia and those of Saxony! between those of Holland and those of Britain! Yet, as all the countries included in Western Europe have long been inhabited by civilized races, and subjected to a careful cultivation, we shall not find any remarkable differences in the character of their fauna. Science has assisted man in contending against physical and climatic difficulties; and genera and species have been naturalized in the one country as in the other which the naturalist would not, *à priori*, expect to find there. Moreover, the progress of cultivation has exterminated the larger quadrupeds, except

those which have been tamed by man and domesticated ; beasts of prey are almost unknown ; and, in a word, the character of animal life in Temperate Europe has been more powerfully modified by civilizing influences than that of any other region of the globe.

Of the wild land-animals still existing in Europe, very few are now found in its western lands, as the following list will prove : the reindeer, elk, red and fallow deer, roebuck, glutton, lynx, polecat, wild cat, squirrel, fox, wild boar, wolf, brown bear, black bear, and weasel. Several of these are never seen in Great Britain except in museums and menageries ; others are rapidly dying out. The otter is still an inhabitant of some of our British rivers, and the newspapers occasionally contain paragraphs descriptive of an otter hunt ; but the beaver is now restricted to the upper waters of the Rhine and the Rhone, to the Danube, and some other large rivers. It may be added that the European beaver seems less ingenious, or at all events less adventurous, than his American congener.

It is needless to say that rabbits and hares are numerous ; the former burrowing in sandy warrens, the latter frequenting the wooded districts. The hedgehog is ubiquitous ; but the porcupine does not range so far as Western Europe, he confines himself to the sunny south.

The ibex and the chamois are found in the Alps, as well as in the Pyrenees. Of the former we have already spoken ; the latter is sufficiently celebrated in these days of Alpine adventure to claim a special place in our gallery of animated nature. Moreover, Byron has made his readers familiar with it :—

“Even so,
This way the chamois leapt;”

a chamois-hunter figuring in his powerful dramatic poem of “Manfred.”

Though goat-like in aspect and habits, the chamois is a true antelope, and is distinguished from its congeners by the peculiar form of its horns, which, rising straight from the crest of the head for some inches, curve backward suddenly, so as to form a pair of sharp hooks. There is something peculiar in the way in which the chamois descends the precipitous slopes of its mountain-haunts. The false hoofs of the hinder feet catch in every irregularity of the soil, and thus play the part of a “drag” or “brake,” while the animal slides forward on the sharp hoofs of its fore feet, which are set close together, and pushed well in advance.

Few animals exhibit more acuteness than the chamois, and it is gifted with the faculty of scenting man at a very considerable distance; so that the life of the chamois-hunter is full of hazard, and he may spend vigilant and laborious days without securing a prize. The wary animal will take alarm at old and half-obliterated footprints in the snow; and if it comes upon them in the course of its rapid bounds down the mountain-side, it will suddenly arrest its career, and dart off in an opposite direction.

It lives in small herds, which, when grazing, invariably post one of their number on some commanding eminence as a sentinel. On any alarm occurring, however, their scent is so keen and their sight so quick, that they take to their heels before even their picket can give the signal.



CHAMOIS HUNTING.

Its hind legs are longer than its fore legs, and therefore it ascends the rocky cliffs more easily and quickly than it descends them. Few sights are more graceful than that of a chamois leaping with natural ease and almost incredible swiftness from crag to crag, and thus mounting to heights which it makes the observer almost dizzy to look at.



CHAMOIS.

It feeds upon the mountain-herbage, and on the aromatic buds of the resinous trees, such as the juniper, the pine, and the fir. To this pungent diet its flesh owes its strong and peculiar flavour, which is hardly acceptable to any palate that cannot relish venison in its "highest" condition. Its skin is much used in the manufacture of the well-known chamois leather, which has gained a high reputation for combined softness and tenacity.

Of both the ibex and the chamois it may be remarked that they live at a greater elevation above the sea-level than any of their congeners, and, consequently, almost

approach the borders of an Arctic climate. They are generally found in the belt between the forest-region of the mountains and the line of perpetual snow; that is, above 8000 feet. The common stag does not ascend higher than 7000 feet, nor the fallow-deer than 6000 feet; besides, both of these animals descend to the plains, where the chamois and ibex are never found. The bear, the lynx, and the stoat are sub-Arctic animals; that is, they range nearly up to the perpetual snow-line.

Of the Monkey family, so abundant in Asia, Africa, and America, Europe knows but a single species, which is confined to the Rock of Gibraltar, and in all probability was imported from Africa.

BIRDS OF WESTERN EUROPE.

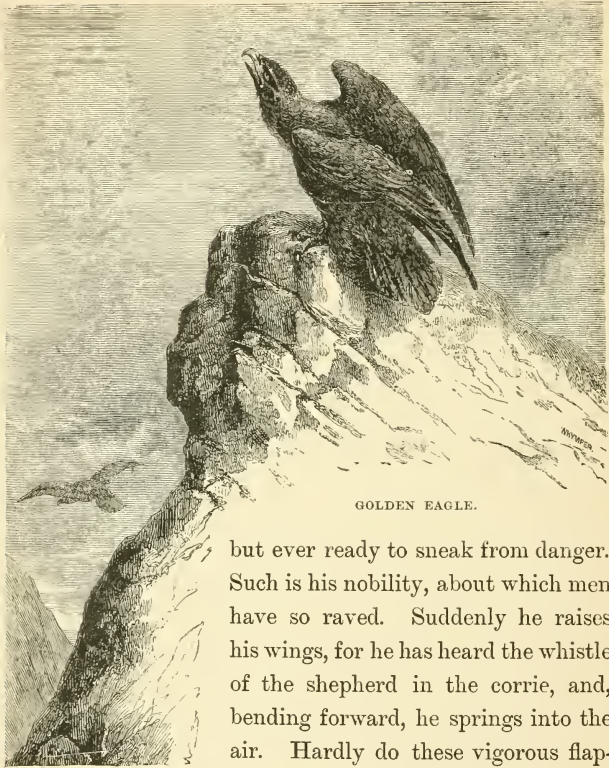
But if Western Europe be so ill-provided with "quadrupedal forms," it is far otherwise when we come to the Birds. Of these it possesses all the sweetest singers—the nightingale, the lark, the thrush, the black-cap, and many another which fill our poetry with echoes of their music. It possesses also an abundance of aquatic birds, and the larger birds of prey are well represented.

Again: no part of Europe is richer in birds, whether as regards species or numbers of individuals, than Great Britain; while the larger game are so plentiful, that, as Mrs. Somerville remarks, "no one thinks of eating nightingales and redbreasts." The popular obloquy would undoubtedly be poured out upon the miserable individual who should turn to such coarse purposes the glorious songster of the night, or the familiar winter-guest of our

“homes and hearths!” We may estimate the species of European birds at 600; of these, about 380 are indigenous or occasional visitors to our own islands. Of all these, the common grouse is the only British bird not found on the Continent; though probably most of our birds came from Germany before Great Britain was rent from the mainland. Many of these being feeble of wing, and incapable of long flights, did not reach as far as Ireland. From the Scandinavian mountains came the capercailzie or heathcock, and the ptarmigan.

Of the eagles Western Europe can boast ten species: one being indigenous to Sardinia; and others, such as the golden eagle and the osprey, or fishing eagle, being found also in America. The largest of our eagles is the golden; the female, which is always the larger bird throughout the Raptorial order, frequently measuring three feet and a half in length, and upwards of eight feet from wing-tip to wing-tip. We know of no better description of this noble creature than that which Macgillivray furnishes. Though often quoted, it will bear quotation again:—

“There he stands erect, with his tail depressed, his large wings half raised from his sides, his neck stretched out, and his eye glistening as he glances around. Like other robbers of the desert, he has a noble aspect, an imperative mien, a look of proud defiance; but his nobility has a dash of clownishness, and his falconship a vulturine tinge. Still he is a noble bird, powerful, independent, but ferocious, regardless of the weal or woe of others, and intent solely on the gratification of his own appetites; without generosity, without honour, bold against the defenceless,



GOLDEN EAGLE.

but ever ready to sneak from danger. Such is his nobility, about which men have so raved. Suddenly he raises his wings, for he has heard the whistle of the shepherd in the corrie, and, bending forward, he springs into the air. Hardly do these vigorous flap-pings serve at first to prevent his descent; but now, curving upwards, he glides majestically along. As he passes the corner of that buttressed and battlemented crag, forth rush two ravens from their nest, croaking fiercely. While one flies above him, the other steals beneath, and they essay to strike him, but dare not, for they have an instinctive knowledge of the power of his

grasp ; and after following him a little way they return to their home, exulting in the thought that they have driven him from their neighbourhood. But on a far journey he advances in a direct course, flapping his great wings at regular intervals, then shooting along without appearing to move them. In ten minutes he has advanced three miles, though in no apparent haste. Over the moors he sweeps, at the height of two or three hundred feet, bending his course to either side, his wings wide spread, his neck and feet retracted, now beating the air, and again sailing smoothly. Suddenly he stops, poises himself for a moment, stoops, but recovers himself before reaching the ground. The object of his regards—a golden plover—has eluded him, and he cares not to pursue it. Now he ascends a little, wheels in short curves, presently rushes down headlong, assumes the horizontal position when close to the ground, and prevents himself from being dashed against it by expanding his wings and tail ; he now thrusts forth his talons, and grasping a poor terrified ptarmigan that sat cowering among the gray lichens, squeezes it to death. He raises his head exultingly, emits a shrill cry, and springing from the ground, pursues his journey. In passing a tall cliff that overhangs a small lake, he is assailed by a fierce peregrine falcon, which darts and plunges at him, as if determined to deprive him of his booty or drive him headlong to the ground. This proves a more dangerous foe than the raven, and the eagle yelps, screams, and throws himself into postures of defence ; but at length the falcon, seeing that the tyrant is not bent on plundering her nest, leaves him to pursue his course unmolested.”

In the Alps and Pyrenees the Lammergeyer, or Bearded Vulture, occupies the place which in the Andes is occupied



LAMMERGEYER AND ITS PREY.

by the condor. It is a powerful bird, with a fierce and bold disposition; much more courageous than the eagle, it fears not to attack the chamois, or, it is said, even man himself. But it principally preys on the smaller quadrupeds, such as lambs (its name means "lamb-vulture"), sheep, hares, kids, and rabbits.

Hawks are numerous in Europe, and in our own islands still survive both in England and Scotland. The gerfalcon, however, is very rare; though it played so important a part in the amusements of the

noble and wealthy in the middle ages.

The Peregrine Falcon is still met with; a handsome bird, about eighteen inches long. It was formerly flown at quarries of large size and considerable strength, such as

herons, ducks, and wild geese ; and its courage was not inferior to its strength. Sir John Sebright describes the chase of the heron as formerly practised in Norfolk. The herons, he says, go out in the morning to rivers and ponds at a very considerable distance in search of food, and return to the heronry towards the evening. It is at this time that the falconers place themselves in the open



HAWKING.

country, to windward of the heronry ; so that the herons, being intercepted on their homeward flight, are compelled to fly against the wind to gain their place of retreat. When a heron passes, a cast of hawks is let go. The heron disgorges his food when he finds he is pursued, and seeks to keep above the hawks by rising in the air ; on the other hand, the hawks fly in a spiral direction with

the view of getting above the heron—and thus the three birds frequently appear to be taking three separate routes. The first hawk makes his swoop as soon as he gets above the heron, who evades the blow by a rapid shift, but in so doing affords the second hawk an opportunity of rising and swooping in his turn. In what is deemed a good flight this is again and again repeated, and the three birds often mount to a great height in the air. When one hawk seizes his prey, the other soon “binds to him,” as it is termed, and, buoyant from the motion of their wings, the three slowly sink to the ground together. No time must be lost by the falconer in getting hold of the heron’s neck when he is on the ground, or he will injure the hawks. For it is then, and not while he is on the wing, that he will use his beak in self-defence.

The graceful swift-winged Merlin, the “lady’s hawk” of medieval days, is found in most parts of Western Europe, where he builds his rude nest on the moorland heath or in wild and sequestered rocky banks and cliffs. The charming little Kestrel or Windhover is still more abundant, and in most of our wooded districts, or in the neighbourhood of mossy ruins and hoary towers, may be seen suspending himself in the transparent air by quick short movements of the wings, so as to keep perfectly, or almost perfectly, stationary; a favourite habit of his, from which he has obtained the name of *Windhover*. He feeds upon small birds, earth-worms, insects, and such small mammals as the shrew and field-mouse. The farmer, therefore, has good cause to welcome his presence in the fields of grain; and probably feels no strong antipathy towards him,

though he occasionally carries off a melodious thrush or piping blackbird.

The mode in which the falcons strike their prey has been happily described by Massinger, one of our Elizabethan dramatists:—

“Then for an evening flight
A tiercel gentle, which I call my masters,
As he were sent a message to the moon,
In such a place flies, as he seems to say,
See me, or see me not! The partridge springs,
He makes his stoop; but wanting breath is forced
To chanceler; then with such speed, as if
He carried lightning in his wings, he strikes
The trembling bird, who even in death appears
Proud to be made his quarry.”

The European owls are numerous, and some of them are handsome. The largest is the Great Horned Owl, which inhabits the forests of Central and Southern Europe, and ranges as far even as Ireland and the Orkneys, but in France and England is seldom met with. It preys on birds, mice, rats, and moles, and flies also at larger game—at young rabbits, hares, and fawns. A large strong bird is this, with a preternatural air of sagacity, and a thoughtfulness of visage which it is impossible to contemplate without feeling impressed.

There are few European countries without the Tawny, or, as it is more commonly called in England, the Screech Owl; a large strong bird, with large round luminous eyes, a rapacious beak, and a garb of soft downy feathers, so thick and full that it *looks* three times its real dimensions! It is strictly nocturnal in its habits: at dusk it quits its woodland shades, and goes in search of the birds and

small mammals on which it feeds; uttering at times a harsh sound, and at others a plaintive howl, which almost justify its ancient character as a prophet of evil. It is not, however, the *proper* screech owl. That appellation belongs of right to the Barn Owl, or Howlet, which is so common in Great Britain and in most parts of Europe. Its plumage is remarkably full, soft, and downy, and its shades of reddish yellow and ash gray are very delicate. Though it has a disproportionately large head, it may fairly be considered a handsome bird, and by no means deserves the unsavoury reputation which, in common with most of its congeners, it has obtained. It loves to steal into the barn or farm-stead, and pounce upon an unlucky mouse, after the fashion so well described by Butler:—

“While moonlight, silvering all the walls,
Through every mouldering crevice falls,
Tipping with white his powdery plume,
As shades or shifts the changing gloom,
The owl that, watching in the barn,
Sees the mouse creeping in the corn,
Sits still, and shuts his round blue eyes,
As if he slept, until he spies
The little beast within his stretch,
Then starts, and seizes on the wretch.”

The barn owl, however, like others of its kind, is a terrible foe to the smaller members of the Bird World. It carries off the young partridges and pheasants, as well as finches and fly-catchers; and the good that it does in the one direction is almost counterbalanced by the ill it does in another.

The superstitions of which it has so long been the object probably originated in its nocturnal habits, its love



1. LITTLE HORNED OWL.—2. GREAT HORNED OWL.—3. BARN OWL.

of sequestered nooks, such as lonesome woods and church-yards, and its wild discordant cry. Our limits will not allow us to borrow the numerous allusions to its doleful

and weird character which occur in our English poets, or it would be easy to collect an interesting anthology.

Thus Shakespeare says :—

“It was the owl that shrieked, the fatal bellman,
That gives the stern’st good-night.”

And an older than Shakespeare,—Chaucer, the Morning Star of English Poetry,—

“The owl croaked all night in the neighb’ring wood,
The prophet he of woe and of mischance.”

The superstition, however, has descended to us from the elder world; for Virgil informs his readers that, on the death of Dido, the heart-broken Queen of Carthage,—

“With a boding note
The solitary screech owl strained her throat,
And in a chimney’s top or turret’s height,
With songs obscure disturbed the stilly night.”

There are two European species of Goatsuckers, as these nocturnal insectivorous birds are strangely called; but at the approach of winter they assemble in large flocks, and migrate to Africa. In the course of their long and hazardous flight many perish; some through exhaustion, others through the attacks of birds of prey. Southward, too, our swift-winged swallows take their flight, when the cold airs of October begin to rattle the beauty of our groves; returning, with wonderful regularity, as the welcome harbingers of spring. Swifts, martins, and swallows, all perform this great annual journey at the bidding of an instinct which never fails. In like manner, the kingfishers visit Western Europe only

in summer ; yet how punctually, and with how remarkable a certainty, they return to their accustomed haunts !

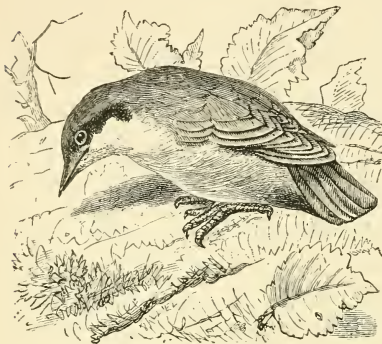
Of European creeping birds, or *Certhiadæ*, we count seven species. In their mode of progression they are not unlike the woodpeckers, and they move up and down the trunks of trees in swift short hops or jerks, clinging to the bark with their sharp claws, and at the same time making use of their tail, in climbing, as a kind of third limb. But while some pursue their insect prey among the trees, others hunt for it on the mouldering surface of wall or rock.

The Common Creeper is a British resident, and in thickly-wooded districts frequently met with. He might fairly be taken as a type of perpetual motion, for he is always "on the move," and his activity seems inexhaustible. The rapidity of his motions almost baffles the observer. At one moment he is hopping before your eyes ; at the next, he has disappeared on the other side of trunk or branch. He is as fearless as he is restless, and enters our gardens and orchards freely, probing with slender bill the fissured bark of every tree in quest of his insect food.

He builds his nest in the hollow of some decayed tree : it is a simple affair—dried grass and bark lined with feathers.

To the same family belongs the Nuthatch, another of the European woodland-birds. He lives partly upon insects, and partly upon seeds, and the kernels of filberts

and hazel-nuts. The strokes which he makes with his hard bill in endeavouring to crack the shells are among



NUTHATCH.

the well-known and pleasant sounds of the forest. He breeds in old trees, and sometimes selects the cavity abandoned by the woodpecker. If the hole leading to his nest be too large, he closes up a part of the entrance with mud, leaving it just wide

enough to admit himself or his mate, and constructing a kind of barrier which prevents his too eager nestlings from falling out of the cradle and being killed on the spot.

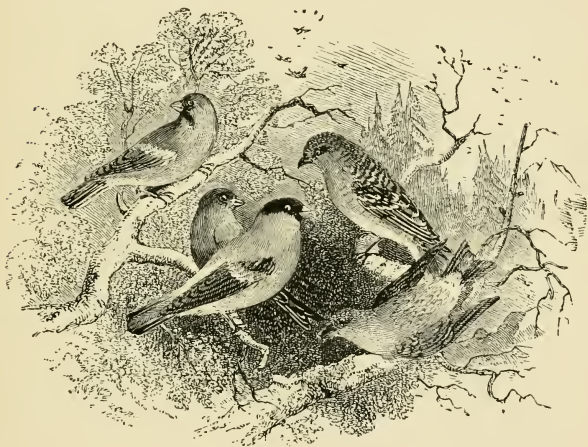
The Fringillidæ, or thick-billed birds, are specially characteristic of the European Bird World, and furnish us with our finest and most famous songsters ; with those winged messengers of music of whom the poet sings :—

“Hark! how the cheerful birds do chant their lays,
And carol of Love’s praise.
The merry lark her matins sings aloft;
The thrush replies; the mavis descant plays;
The ousel shrills; the redbreast warbles soft:
So goodly all agree with sweet consent
To this day’s merriment.”—SPENSER.

All the finches are small birds, active and restless, with an undulatory flight which is not protracted to any con-

siderable distance. They live mainly upon seeds, but vary their diet with an occasional repast of worms and insects. Hence they are found in our meadows and gardens, and in well-wooded districts over all Temperate Europe. Some, indeed, range as far as the Arctic Regions, in those parts where any kind of vegetation flourishes.

The Fringillidæ live in flocks, and show a gregarious tendency more particularly during the winter months.



FINCHES.

The species that live in the colder regions of Europe migrate southward at the close of the summer, and those that inhabit mountainous districts flock to the lower grounds. Their song is very sweet, and characterized by much variety of modulation. Some of them are famous for the ingenuity of their nests, but these are species found only in India and Africa ; such as the tailor-birds,

which sew a couple of leaves together so as to form a pouch, and suspend it to the branch of a convenient tree.

Among the European Finches we may name the chaffinch ; the goldfinch, which constructs a beautiful little nest ; the greenfinch, the bunting, the bullfinch, and the lark.

The Larks belong exclusively to the Old World. They are generally found in open arable ground, though some prefer the cultivated districts.

The type of the race is the Skylark, which makes its nest on the ground, but rises to "heaven's gate" when it gives utterance to its sweet and varied song. With the nightingale, it shares the love and praise of the poets. Its strain is not so copious and richly cadenced as the nightingale's, but it breathes a delightful air of joyousness ; whence Shelley addresses the singer thus :—

"Hail to thee, *blithe spirit!*
Bird thou never wert,
That from heaven, or near it,
Pourest thy full heart
In profuse strains of unpremeditated art."

An excellent description of its song and of its manner of singing is given by Professor Wilson in one of his charming essays. "Higher and higher," he says, "than ever rose the tower of Belus, soars and sings the lark, lyrical poet of the sky. Listen, listen ! and the more remote the bird, the louder is his hymn in heaven. He seems, in his loftiness, to have left the earth for ever, and to have forgotten his lowly nest. The primroses and the daisies, and all the sweet hill-flowers, must be remembered



SKYLARK.

in the lofty region of light. But just as the lark is lost—he and his song together—both are again seen and heard wavering down the sky, and in a little while he is walking, contented, along the furrows of the braided corn, or on the clover lea, that has not felt the ploughshare for half a century.”

The skylark makes its home near the dwellings of man, because in the arable land and pastures it finds an abun-

dance of the worms and seeds that make its daily food. Its flight is peculiar. It does not rise in the air, as most birds do, with one sidelong motion, but by a succession of leaps or stages, as if it were springing from terrace to terrace ; or it may be said to *twist upward*, like a wreath of smoke, as if it were supported by, and partly yielded to, the impulse of the atmosphere. Its song is in accordance with its manner of flight. It swells or sinks in harmony with the bird's various ascending efforts, and bursts into one full bold excellent strain only when it has reached the topmost height, where it remains poised above the earth, like a star.

It is a handsome bird, about nine inches long ; but its plumage is soberly coloured—a light reddish brown, spotted and streaked with black on the upper parts, and with brown on the under. The bill is conical and robust ; the tail somewhat long ; and long, too, are the slender legs and toes.

Very similar, nay, almost identical, in the colour and markings of its plumage, is the Woodlark ; but it is a smaller bird, with a slenderer bill and a shorter tail. It avoids the habitations of men, preferring the wild coppices and silvan shades ; not living *in* the forest, however, but on its *borders*, or in the open wastes that spread around it. It resorts to the farmyard in mid-winter only, where, like the sparrow, the bunting, or the finch, it picks up a scanty meal of grain ; but its principal food is insects, larvæ, caterpillars, and the small land molluscs. It perches, which the skylark does *not* ; but otherwise it resembles that bird in most of its habits. It feeds on the ground,

builds and breeds on the ground ; and generally rises into the air to sing—its notes swelling as it ascends, and sinking softly as it returns again to earth. Its strain is sweeter even than that of the skylark, and is intensified by a touch of pathos which is not recognized in the other.

In this connection we may glance at some of the principal Song-Birds which inhabit Western Europe, without troubling the reader with a scientific classification, though most of them belong to the group of the Sylviadæ, or Warblers.

By common consent the Nightingale is accepted as the type of the sweetest and richest melody. “To sing like a nightingale” is the highest praise we can accord to a human vocalist. Both by the old as by the modern poets its strain is eulogized as surpassing that of all other birds in the harmony of its cadences and the variety of its modulations. Yet, to look at this little brown bird, you would never suppose it was so famous a musician. Its plumage is absolutely without attraction, though the bird is gracefully formed and graceful in its movements.

We cannot pretend to put before the reader the fanciful or enthusiastic tributes to its skill and excellence as a songster which have been paid by naturalists and poets, by preachers and thinkers, ever since the day that man first engaged in the study of Nature, and learned to appreciate the goodness of the works of God. They may all be summed up, perhaps, in quaint Izaak Walton’s celebrated outburst, which evidently came from a full heart. “The nightingale,” he says, “breathes such sweet music

out of her little instrumental throat, that it might make mankind to think that miracles are not ceased. He that at midnight, when the very labourer sleeps so securely, should hear, as I have very often heard, the clear airs, the sweet descants, the natural rising and falling, the doubling and redoubling of her voice, might well be lifted above earth, and say, 'Lord, what music hast thou provided for saints in heaven, when thou affordest bad men such music on earth?' "

As for the *character* of its song, it seems to be accurately described by Coleridge, when he speaks of

" The merry nightingale,
That crowds, and hurries, and precipitates,
With fast thick warble, his delicious notes,
As he were fearful that an April night
Would be too short for him to utter forth
His love-chant, and disburden his full soul
Of all its music."

That is the impression which the nightingale's song produces: it is so full and rich and copious—so prodigal, as it were; as if the bird could scarcely find time to measure its strain or regulate its utterance. Note follows note with an exuberant rapture; and the melody now sinks, now swells—now wanders into a plaintive minor key—now breaks out into a glorious burst of joyousness—now quivers and trembles with subdued emotion—now flows like a swift and abundant stream—in such wise that no words can hope to do it justice.

The nightingale makes its appearance in England about the middle of April; the males first arriving, and then their mates. Having selected their partners, they proceed

to build their nests—generally in the midst of a coppice or thicket, but sometimes at the roots of closely-growing hedgerows. The construction is rude enough: the outer layer consists of dry leaves, loosely put together, and extending some inches from the nest proper, which is



NIGHTINGALE.

cup-shaped, about four inches in breadth and as many in depth, and formed of small, dry fibrous roots woven together, and lined with hair and moss. Herein the female deposits from four to six eggs, of a pale brownish colour. The male and female both take part in the labour of incubation. When the nestlings are old enough to shift for

themselves, and autumn arrives, the nightingale migrates to the western shores of Europe, and then proceeds southward until it reaches Africa, where it spends the winter. It never appears to pass the Atlas mountains. Though very abundant in Spain and Italy, where the genial climate would seem to favour its permanent residence, it migrates regularly at the approach of winter, just as it does in our own colder land.

The Blackcap, the Garden Warbler, and the White-throat claim a prominent place among the singers in Nature's feathered choir. The first named frequents the woods, orchards, and gardens; is shy and timorous; builds its nest in the bushes; and fills the echoes with a peculiarly loud, clear, and rapid song. Perhaps, in the tribe of Warblers, it may justly demand to be regarded as second only to the nightingale. The garden warbler, also a summer visitor, is partial to pulpy fruits, as well as larvæ and insects; and this partiality induces it to build in and about our gardens and orchards, that it may satisfy its appetite at will. It generally sings in the midst of the densest copses, where it can feel safe from intrusion, and pour forth its melody at leisure. Of the whitethroat we may record that it is a popular favourite, and hence rejoices in an extraordinary number of amusing sobriquets; such as Peggy Whitethroat, Blethering Tam, Whattie, Whiskey, Muftie, Beady. It is a quick, vivacious bird, clothed in a light grayish brown plumage on the upper part of the body, and a grayish white on the under. It deserves, we think, a better character than White of Sel-

borne gives it,—who says : “ Its note, which is continually repeated, and often attended with odd gesticulations on the wing, is harsh and unpleasing. These birds,” he continues, “ seem of a pugnacious disposition, for they sing with an erected crest and attitudes of rivalry and defiance. They are shy and wild in breeding time, avoiding neighbourhoods, and haunting lonely lanes and commons—nay, even the very tops of the downs, where there are bushes and coverts ; but in July and August they bring their broods into gardens, and make great havoc among the summer fruits.” For our own part, we do not believe that the ill they do by pilfering our fruit outbalances the good they do by destroying the insects ; and as for their song, we hold that it is a cheerful, vigorous, and pleasant strain.

One other of the Warblers deserves a special notice—the Golden-crested Wren, or Gold-crowned Knight, the smallest of British and European birds. It loves the forest-shades, where it employs its straight, slender, tapering bill in hunting out its insect prey. A beautiful though tiny bird, with plumage varying from yellowish brown to brownish gray, very soft and silky ; and with a crest of bright orange feathers on its little head, which shines like a mimic diadem. But we can say nothing of it which has not been better said by Bishop Mant :—

“ And such, with voice so sweet and small,
From oaken twig, the madrigal
Of him the Bird of Golden Crest,
And size diminutive, the least
Of Britain's Warblers. To the ear
More frequent through the waning year

Comes the sweet note from flocks that seek,
From Hyperborean mountains bleak,
Our milder glens. But as they wind
Round oak or elm's deep-furrowed rind,—
Or to the spreading fir-tree wing
Alert their fluttering flight, and cling
Beneath the boughs, the foliage thread,
And, creeping to the topmost head,
From branch to branch all noiseless steal,—
The trees the tiny form conceal.
The back with ashy green bedight;
The wings with sable barred, and white;
The breast, pale yellow mixed with brown;
And fringed with black the orange crown."

Less notable as songsters, but contributing some pleasant notes to Nature's grand choral harmony, are the Stonechats and their allies, which, taken as a whole, form a tolerably large and not unimportant group. Most of these birds frequent the stony places and open pastures, or shrubby and wooded districts. One of these, well-known on the downs of Sussex, is the bonny wheatear; so called, perhaps, from the resemblance of its notes to the syllables, *weet-jar*. It visits us about March, and migrates to warmer climes about November, though it quits the inland districts as early as the middle of September. It builds its nest in the crevices of walls, the recesses of deserted quarries, or in the cavities of steep banks. Being a very dainty morsel, it is much sought after by the Sussex shepherds; who, towards the end of July, cut snares for it in the green turf, consisting of a couple of twisted horse-hair nooses. This trap is protected by an upraised clod of turf; affording a shelter which the timid wheatear seeks at the slightest alarm—the shadow even of a passing cloud—and accordingly plunges into the ambush and is caught.

How familiar a bird in Western Europe is the Robin, or Redbreast—that time-old favourite of man, long “sacred to the household gods,” and the hero of so many picturesque legends! Though not much seen in the summer, when it seeks the woodlands, it is always with us; and the first frown of winter brings him back to our threshold, to crave the hospitality which is never denied. Timorous at first, he beats against the window, or taps at it with tiny bill; then, as he grows more confident, alights on the genial hearth, and “hopping o’er the floor, eyes all the smiling family askance,” pecking and starting and wondering at the strange objects around him—until, his traditional trustfulness being fully aroused, the “table crumbs attract his slender feet.”

He builds his nest about March, he and his mate; choosing the hollow of a bank for its resting-place, or under hedge or bush, or a small tuft of herbage. His food, at this time and during the summer, consists in the main of worms, larvæ, and insects. A sweet little song he sings at all times; not very full or powerful, but simple and agreeably varied. His domesticity has always rendered him very dear to man, and he is protected by a score or so of legends and traditions which invest him with a kind of sanctity; so that he is as safe from the adventurous truant as from the eager sportsman.

The Wagtails may be passed over with the remark that they love the neighbourhood of streams and water-courses, and are characterized by a peculiar habit of vibrating the body, and more particularly the tail. Their flight is rapid,



WAGTAILS.

buoyant, and graceful ; but there is nothing attractive in their song.

We come to the notable family of the Thrushes, which includes seven British species. All are birds of good size ; seek their food in gardens, fields, and pastures ; and retire to roost in the quiet shades of the woods and thickets.

High among Nature's minstrels must be placed the glorious Song Thrush, or Mavis—ranking next to the nightingale and lark. A native of all Temperate Europe, it is resident throughout the year in the less inclement regions. Its song possesses, in a remarkable degree, the three great qualities of variety, power, and *timbre*, or quality of tone. Moreover, it is continued through a large portion of the year ; beginning early in spring, and continuing until the time of the sere and yellow leaf. It feeds on worms, insects, fruit, berries, and various species

of garden-snails, the shells of which it breaks with much dexterity. In the south of Europe it feeds largely at the



MAVIS.

vintage season on ripe grapes ; and its flesh then acquires a flavour which renders it much esteemed by epicures.

Another well-known species is the Missel Thrush, which is a permanent resident in Britain ; though considerable flocks arrive every October, to leave us in the following May. It flies about in little companies of fifteen to twenty, searching for seeds, worms, and larvæ in the open fields. In the winter its food is principally berries, and especially the berries of the mistletoe. It is not a good singer, but before a gale or a snowstorm always raises aloud its strong sharp voice, as if to sound a signal of alarm.

To the same family belongs the Blackbird—another of Nature's favoured and favourite choristers, whose loud, clear, mellow music may be heard amid gardens and orchards, hedgerows and copses, through the pleasant months of spring and summer, and even late into the autumn in favourable seasons. It builds its nest close to human dwellings or ivy-shrouded walls, in decayed trees or closely-growing bushes. The nest is constructed of moss and



BLACKBIRDS.

sticks, plastered inside with mud, and lined with anything soft and dry. Herein the female deposits from three to six eggs of a greenish blue, shaded and mottled with a variety of pale tints. It is an early singer; one of the joyous heralds, or rather attendants, of “rosy-bosomed spring,”

with a soft, clear song, of which the peculiarity is its round, flute-like tone. Its food appears to be multifarious: grains and seeds of all kinds, larvæ, worms, snails, and insects generally. It is to be found in almost every district of the Temperate Zone; not only throughout Europe, but in Asia,—and its liquid melody pierces the still air that closes round the mountain peaks of the lower Himalaya. The agriculturist regards it, however, with mingled feelings; for much as he delights in its song, he

grudges it the daily meals it makes on his grain, and pease, and juicy fruits—forgetting that the war it incessantly carries on against beetles and other insects is worthy of a much more liberal reward than it receives.

In our earlier poetry it figures frequently under the name of the Merle, the Woofil, or the Ousel. As in Shakespeare :—

“The ouselcock, so black of hue,
With orange tawny bill.”

In our description of the Bird Life of warmer regions, we have referred to the orioles, most of which are remarkable for the skill they exhibit in the construction of their nests. Only one species—the Golden Oriole—visits Temperate Europe; and its beauty of plumage, which shines with the glow of a golden yellow, relieved by tints of black and gray, makes it a welcome guest. It



GOLDEN ORIOLES AND NEST.

builds a flat, saucer-shaped nest, of interwoven wool and long stems of grass, which it attaches to the horizontal fork of the branch of a sequestered tree. It displays no particular ingenuity; probably because the need of defence

which the bird feels in Tropical forests is not felt to the same extent in our quiet and secure groves.

In Great Britain we have several species of Buntings—handsome birds, but of a somewhat heavy build of body, with a strong, swift, undulatory flight. They move on the ground in a succession of short leaps, retiring to trees and thickets when alarmed, and roosting on the ground or on low bushes.

Well known in every part of the country is the graceful little Yellow-hammer, or Yeldring, with its coat of different shades of yellow, warmed with red on the back and breast, and relieved by black-tipped plumes. It frequents the bushes and low underwoods, and the willowy banks of brooks and ponds, where it builds its bulky nest of coarse grasses and small twigs, lined with fine grass, fibrous roots, and hair. The eggs, oval in shape, and of a purplish-white colour, are marked with streaks and dots so like written characters, that the bird is sometimes called the Writing Lark. It cannot claim comparison with the lark, however, as a singer; for, in truth, its song is monotonous, and almost harsh, and is limited to one constantly-repeated strain of two or three notes. Mudie says:—"It is a bird of the fields and the daylight, offending in nothing, except the want of song be an offence; and certainly not so disagreeable in that way, or so destructive of small seeds in gardens, as the house-sparrow; but still it is a marked bird, and the very beauty of its eggs is, in some places, made a ground for their wanton destruction. According to the absurd superstition, the parent birds are fed each

with ‘a drop of the devil’s *blood*’ on the morning of May-day ; and that infernal draught taints the eggs with those streaks and ‘gouts’ which, in truth, make them so beautiful. What first gave rise to superstitions so absurd, and so contrary to all that we are taught to know of the nature of spiritual beings, it is not easy to say ; but, to the credit of the times, they are fast wearing out.”

More numerous in France and Germany than in England is the Ortolan Bunting. In France they are caught in great numbers, and fattened for the table. For this purpose they are placed in a warm and perfectly dark chamber, with only one aperture in the wall. Their food is scattered over the floor of the chamber. In the morning the keeper places a lantern in the orifice of the wall ; by the light thus thrown in, the ortolans, “thinking the



ORTOLAN.

sun is about to rise,” greedily consume the food about the floor. More food is scattered, and the light withdrawn. The ortolans soon fall asleep. In about two hours the whole process is repeated ; and so on, four or five times every day. Thus treated, the ortolans soon develop into little balls of fat ; a result due to the absence of waste by motion, the extra sleep which the birds obtain, the absence of the usual chemical changes from the influence of light, an unusual abundance of food, and great facilities for

digesting it, in being removed from the view of external objects, which produce anxieties, and affect the process of digestion.

What shall we say of the Sparrows,—of those familiar, intrusive, curious, restless, “perky” birds which everybody knows? which frequent our fields and farmyards, our copses and hedgerows, and build on our housetops and under our eaves? The common cock-sparrow is even more of a familiar friend than the robin: he has been well described as “the bold, bright bird, so full of assurance, so free and easy in his manners, that one sees everywhere, dodging about under the horses’ feet in the street; hail-fellow-well-met with the pigs, the sheep, and the cows in the farmyard; feeding with the pigeons and the fowls; helping himself to the grain from the stacks, and the seeds from the furrow, as coolly as if all the farm produce belonged to him. A small, stout, active fellow, getting up a squabble in the garden with his congeners about the right of possession to some roosting, or nesting, or feeding place, and making a most astounding hubbub; chirping away on the roof where he means to build his nest, whether you like it or not.” A strong, lively bird, that seems to laugh at frost and snow, and to maintain his cheerfulness, like Mark Tapley, under the most discouraging circumstances.

The tendency of the sparrow to increase is very remarkable, for one pair of birds will frequently bring up fourteen nestlings in a season. This extraordinary reproductive power is Nature’s provision against the numerous enemies to which this bird is exposed. It is, however, one of the

farmer's most valuable auxiliaries, when its numbers are kept within due limits ; destroying an enormous quantity of caterpillars, grubs, and insects. The good it does in this way cannot be over-estimated. The loss occasioned to the wheat, in one single year, in a department of Eastern France, by a solitary species of larvæ, was computed, not long ago, at £160,000. To the ravages of this insect were attributed the scanty harvests of the three years preceding 1856. In certain fields the loss amounted to nearly half the crop. Out of twenty pods of colza, taken at hazard, and containing five hundred and four seeds, only two hundred and ninety-six seeds were good ; the rest were consumed or damaged by insects. And all this destruction was due to the circumstance that the French cultivators, in their ignorance, had carried on a war of extermination against the small insectivorous birds, and especially against the sparrows. The hedge-sparrow consumes some five hundred and fifty insects per diem. Frederick the Great declared hostilities against the sparrows, because they were as fond of cherries as he was. Of course, they beat a retreat, and disappeared. But in a couple of years not only no cherries were to be had, but scarcely any other fruit ; the caterpillars revelled in unlimited abundance. The great Prussian conqueror was glad, therefore, to sign a treaty of peace with his feathered allies, and to allow them a share of the fruit which their efforts preserved.

Reference may here be made to those finches which are among the pleasant song-birds of Temperate Europe. In most wooded and cultivated districts, among the trees of

our gardens, orchards, or plantations, may be found the ingenious little nest of the graceful Goldfinch ; a pretty “home,” meet for so buoyant and elegant a tenant ; elabor-



GOLDFINCHES AND NEST.

ately composed of twigs and threads and fibres, of grass and moss and lichens, all fitted together with much dexterity, and lined with thistle-down, cotton, or other vegetable substances of equal softness. Its exterior is

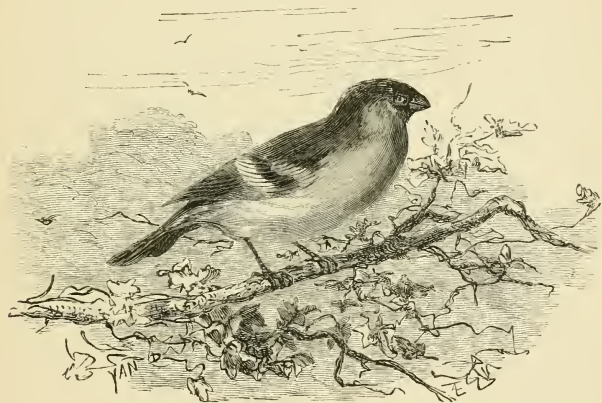
singularly smooth and neat, not a spray of moss or lichen being allowed to project. The nest, and the localities in which it is usually placed, are well described by a Scotch poet, not so well known as the fidelity and beauty of his nature-pictures merit :—

“ The goldfinch weaves, with willow-down inlaid,
And canach tufts, his wonderful abode.
Sometimes suspended at the limber end
Of plane-tree spray, among the broad-leaved shoots,
The tiny hammock swings to every gale ;
Sometimes in closest thickets ’tis concealed ;
Sometimes in hedge luxuriant, where the brier,
The bramble, and the budding plum-tree branch,
Warp through the thorn, surmounted by the flowers
Of clinging vetch, and honeysuckle wild,
All undefaced by art’s transforming hand.
But mark the pretty bird himself ; how light
And quick his every motion, every note !
How beautiful his plumes ! ”

It is very pleasant to see a flight of goldfinches disporting themselves in the yellow fields ; foraging among the

tall thistles, clinging to the stalks in a hundred pretty attitudes, scattering abroad their gossamer-like down, and apparently entering with much enjoyment into their various pursuits. Suddenly, at some alarm, they interrupt their labours, pause for a moment, and then take to their wings in succession.

The Bullfinch is remarkable for its intelligence and docility, and for the ease with which it can be tamed. Its



BULLFINCH.

natural song is not remarkable, but it possesses an extraordinary faculty of imitation, and is capable of being taught even difficult airs. It feeds chiefly upon insects, but also commits extensive depredations upon the young buds of the cherry and other fruit-trees. Its plumage is very fine: a rich velvety black on the head and throat; deep gray on the upper part of the body, and the under part of a warm vermilion, paling towards the tail; the

wings and tail are black, but diversified with steely-blue. In shape the bullfinch may be characterized as the most compact and neat, and the most expressive of strength and energy, of all our little birds. The outline of its head and bill is as fine as that of the handsomest of the hawks ; and its bill, with the exception of that of the hawk or eagle, is made stronger in proportion than the bill of any other British songster. Its manners, as Mr. Wood remarks, are not peculiarly brisk and lively, nor even varied, but they are social and pleasing ; and it is very entertaining to follow them to their native haunts, and study their habits. Heard from a distance, the voice of the male sounds soft and mellow ; that of the female closely resembles it, but may readily be distinguished by a practised ear. While they are singing, a smart sidelong motion of the tail may be noticed. And when the female is sitting, her mate will remain for hours together perched on a neighbouring branch, sounding his plaintive note, apparently for her amusement. Unless you *see* him singing, you lose the most finished and interesting part of the performance ; for he puffs out his plumage, and makes strange contortions with his head. However, if he discovers any person observing him, he shrinks to his ordinary size, signals to his mate, and, accompanied by her, betakes himself to a distant tree, where the fond but timid couple remain, out of sight but within hearing, conversing with each other in mellow notes, and waiting for the departure of the intruder.

A favourite bird with the poets is the melodious Linnet,

or Lintie, which frequents the hilly and mountainous districts of Eastern Europe, the heathery moorlands, and the banks and braes clothed with clumps of gorse or yellow broom. Its song is singularly sweet and tender, like the strain of an Æolian harp; and when heard at evening on



LINNET.

the declivity of a lonely moorland hill, fully justifies the enthusiasm of its poetical eulogists :—

“The purest hymn,
A melody like some old prophet-lay,
Is thine, poured forth from hedge and thicket dim,
Linnet! wild Linnet!”

The Green Linnet is sometimes called the Greenfinch, and the Green Grosbeak; a bird about six inches and a quarter in length, with a beautiful coat of green plumage,

shaded with gray and yellow. It haunts "well-ordered parks and gardens shady," flowering copses, dense shrubberies, and blooming orchards, where it carries on a quest, as assiduous as that of Sir Lancelot after the Sangreal, for grain, seeds, and insects. It is a robust and hardy bird, and in the breeding season may frequently be seen engaged in chivalrous encounter with the common sparrow. From the fruity orchard-depths its song, during the warm days of summer and autumn, resounds with a full and genial note.

The Lesser Redpole is the smallest of the Passerine birds, not exceeding, scarcely ever attaining, five inches in length; a fairy-like little minstrel, with a carmine-tinted breast, yellowish brown back and sides, the under parts brownish white, the throat of a velvety black, and the head capped with crimson. It has a loud clear voice, and a vigorous buoyant flight. In the winter it consorts with its kind, and large flocks assemble in the birch and alder woods to collect their daily meals of seeds.

The Crossbills seem to occupy a mid position between the bullfinch and the bunting. They are plentiful in Europe, but rare and irregular visitors in Great Britain. Their favourite haunts are the fir plantations; but in summer they cluster about the gardens and orchards, and help themselves freely to a banquet of fruit. They are brightly plumaged birds, but their special characteristic is that curvature of the extremities of the mandibles to which they owe their names.

Western or Temperate Europe contains four species of the Pigeon tribe.

The Ring-dove, or Wood-pigeon, the “Cushat” of our poets, and the proverbial emblem of love and gentleness, is the largest of our European pigeons; a strong and handsome bird, with a small head, a short neck, and a large full body. The beautiful blending and shifting tints of the neck, as seen in different lights, are fair to look at, and



WOOD-PIGEONS.

their iridescent appearance is commemorated in the fine lines of the author of “*Britannia’s Pastorals*,” old William Browne :—

“Like to the changing colours that we see
About the dove’s neck, for variety.”

It avoids open and uncultivated places, preferring the repose of the leafy woodlands, where it nestles in the hedgerows, or among the spreading branches of the beech or

pine ; sallying forth, with the first rays of the sun, to seek its food, which consists of any kind of grain or seeds, or even beech-nuts and acorns. It is less gregarious than the rock-dove, but in the winter sometimes assembles in large flocks ; though most naturalists suppose that the greater number migrate to the warmer regions of Asia and Africa, where their food is more abundant. Its nest is a rude construction ; a few twigs loosely bent together. Here the female deposits a couple of eggs of snowy white ; and here you may listen to the soft notes of the tender parents as they respond to each other in a deep and pleasant strain, resembling the slow utterance of the two syllables *coo roo*, *coo roo*. Clap your hands, and away they fly ; not, however, to any great distance from their nest, but wheeling high in the air, and circling round and round, until such time as they deem it safe to return to it.

The Rock-dove, the parent of our domestic pigeons, is very widely distributed, and occurs in all the temperate parts of the Old World.

As far north as the “stormy Orcades,” in the craggy isles of the Hebrides, along the rock-bound coast of northern Scotland, and elsewhere on our island-shores, is found the rock-dove. It frequents the hollows and caverns, where it builds a rude nest of twigs, grass, and weeds. It lives upon all kinds of seeds and grain, and often wings its way a considerable distance inland in order to obtain a supply of food. Its young are easily tamed, when taken early from the nest.

Our domestic pigeons bear a close resemblance in their

general characters to the original wild stock ; but the varieties which the skill and ingenuity of man have introduced into what are called the “fancy breeds” are almost innumerable. Many of these differ so widely from each other, as from their common parents, that the uninitiated find it difficult to believe that they all spring from the same species. In the remarkable modifications thus effected, it is not too much to say that every part of the bird is involved : the bill is changed, the character of the plumage is changed, even the feet are changed to a considerable extent ; while the colour ranges from pure white to jet-black through almost every possible combination of the intervening tints. In one variety even the number of feathers in the tail has been largely increased.

Nearest in form to the common pigeon come the Tumblers ; of which Willoughby says : “These birds are small and of diverse colours. They have strange motions, turning themselves backward over their heads, and show like footballs in the air.” They are distinguished from the original stock by their small head, bill, and feet. As for their colours, what can we possibly say in our restricted space ? There are blacks, blues, checkers, reds, yellows, duns, silvers, blue and black grizzles, and the like ; their name is legion.

We pass on to the Jacobins. These have the feathers of the sides of the head and neck curled, so as to compose a kind of ruff. Or, to quote Willoughby again, “they are called by the Low Dutch *Cappers*, because on the hinder part of the head, or nape of the neck, certain feathers, reflected upward, encompass the head behind, almost after

the fashion of a monk's hood, when he puts it back to uncover his head." Jacobins, like tumblers, are of all colours, and shades of colours ; but it seems to be a *sine quâ non* that the head, tail, and flight feathers should be white.

In the Fan-tails the tail-feathers are increased to twenty-four or thirty-six ; that is, to twice or thrice their natural number. "When they walk up and down they do, for the most part, hold their tail erect like a hen or turkey-cock," and so as to form a kind of expanded fan. Their points of perfection are thus enumerated : a neck tapering, and so long that at times the bird's head will nestle among the tail-feathers ; a full prominent breast, and a tail always erect, not numbering less than twenty-four feathers, or more than thirty-six,—if it does, the weight of the tail, we are told, will cause it to droop, and thus will considerably injure the beauty of the bird.

The Carriers are large birds, with large feet and elongated bill, and are distinguished by the considerable development of the naked skin at the base of the bill, forming a large warty wattle. They are interesting birds from the historical and poetical associations which attach to them. From a very ancient time they have been employed as messengers, though now outstripped by the flash which speeds silently and unseen along the electric wire. We know that they were employed at the great Olympic games to make known the names of the successful competitors to far-off districts ; and they were used for the same purpose at our English races down to a very recent period. Quaint Thomas Fuller tells us, in his "History of the Holy Wars," that when the Crusaders were encamped before Jerusalem,

they intercepted "a letter tied to the legs of a dove (it being the fashion of the country both to write and send their letters under the wings of a fowl), wherein the Persian Emperor promised help to the besieged." Numerous similar instances might easily be recorded.

How the carrier finds his way to his destination, is a problem not easily solved. It can hardly be by sight, because birds conveyed from London to Epsom under cover have returned to their homes in the metropolis with unfailing accuracy. Probably it depends on that same marvellous and mysterious instinct which regulates the migrations of the swallow and other birds of passage. Phrenologists have a theory that the certainty with which they fly from point to point is due to an excitement of the organ of "locality;" and electro-biologists chatter about "magnetic influences." The fact is, the question at present cannot be satisfactorily answered.

Another variety of fancy pigeons is the Trumpeter; a hardy bird, generally pearl-eyed, black-mottled, and abundantly feathered about the legs and feet. "The reason of their name," says an old writer, "is from their imitating the sound of a trumpet after playing. The more excited they are, the more will they trumpet; therefore, if you have a mind to be entertained with their melody, you must give them plenty of hemp seed." But it is quite as probable that the trumpeter owes his name to his soldierly aspect as to his supposed martial notes.

Next we come to the Nuns, which somewhat resemble the tumbler in shape, but are marked by a plumy tuft rising from the back of the head. The breast, belly, back,

neck, and upper part of the wings are of a snowy white ; the head may be either black, yellow, or red.

Pouters are so called from the curious manner in which they can inflate or distend their crops. Hence their old name of Croppers. As Willoughby says : "They are so called because they can, and generally do, by attracting the air, blow up their crops to that strange bigness, that they exceed the bulk of the whole body besides ; and which, as they fly, and while they make that murmuring noise, swell their throats to a great bigness, and the bigger the better and more generous they are esteemed." Their appearance, when the crop is thus inflated, strikes us as pre-eminently ridiculous ; especially as there is a wonderful pomposity in their gait, and air of self-satisfaction in their whole bearing.

In our enumeration of the European pigeons we must not omit to refer to the graceful and beautiful Turtle-dove, which in all time has been the type of faithful affection. Thus, we read in Sir Philip Sidney :—

"Time doth work what no man knoweth,
Time doth us the subject prove ;
With time still affection groweth
To the faithful turtle-dove."

And every reader will remember Byron's allusion to

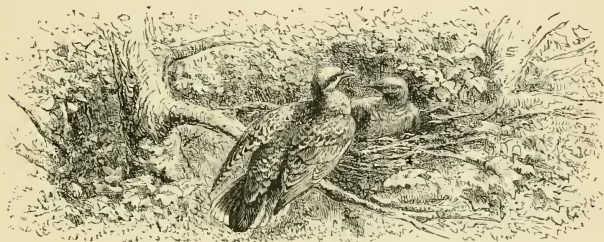
"The rage of the vulture and love of the turtle."

A yet happier illustration is afforded by Spenser :—

"Like as the culver on the baréd bough
Sits mourning for the absence of her mate,

And in her songs sends many a wistful vow
For his return, that seems to linger late:
So I alone, now left disconsolate,
Mourn to myself the absence of my love,
And wandering here and there, all desolate,
Seek with my plaints to match that mournful dove."

The turtle-dove, which is but a summer visitor in England, builds a slight nest in bush or tree, at a height of eight or ten feet from the ground. Its voice is remarkable as a deep, tender, and almost plaintive cooing.



TURTLE-DOVES.

All the doves are beautiful birds, with a "rainbow shimmer" of colours about the head and neck, but distinguished rather by harmony and softness than by gorgeousness of colouring. Their gentle shy manners, soft notes, and bashful yet confiding looks, have made them in all ages meet emblems of fidelity; and still more, the dove has been selected to shadow forth that Holy and Divine Love which so far surpasses our human and transient affections. The Holy Spirit, as we are told by the evangelist, descended from heaven in the form of a dove; and it was a dove that brought back to Noah the olive-branch which assured him that God's judgment was passing from the earth.

The Gallinaceous Birds are well represented in Europe.

Of Pheasants, however, only one species is indigenous, though so many varieties have been completely naturalized that we are apt to forget their foreign origin. Whether a stranger or an



PHEASANTS.

aborigine, there can be no doubt that, as he moves along the grassy glades, the sunshine slanting on his burnished neck—now raising his head to listen to some distant sound, now stooping to pick up a fallen acorn—he is a right royal creature! A flock of these handsome birds, when feeding on the wild wood-fruits in some sequestered avenue of the forest, presents a charming sight.

According to Daniel, the common pheasant found its way into Europe, from its original habitat on the banks of the river Phasis, about 1250; and mention of it occurs in English records before the close of the thirteenth century.

In many parts of Europe, and here and there among the piny woods of Scotland, may be found the Capercaillie, or great Cock-o'-the-Woods; the largest of all feathered game, for it weighs as much as a good-sized turkey,—that is, from twelve to fifteen pounds,—and measures about two feet nine inches in length. The word “capercaillie” is derived from the Gaelic *capulcoille*, or “horse of the wood.” It is a splendid bird, in a glorious plumage of gray and black and brown, all finely shaded, and blended together, as it were, by a gloss of golden green.

In Scandinavia the capercaillie is found as far north as the pine-tree grows, and also in the Russian forests. It is among the pines and the silvery birches that it loves to build its nest.

In similar localities is found the Hazel Grouse; and in Central as well as Northern Europe the Blackcock is plentiful. The latter is fond of the moorland districts, where the heather covers brae and hollow with the beauty

of its purple blossoms. The blackcock is polygamous, and in the breeding season desperate combats take place between the males for the favour of the weaker sex. In the warm sunny days, says Sir William Jardine, at the close of winter and early in the spring, the males, after feeding, may be seen arranged on some turf-fence, rail, or sheepfold, pluming their wings, expanding their tails, and practising their love-call. Should the genial weather continue, the flocks soon separate, and the males select some conspicuous spot, from which they seek to drive all rivals, and there they begin to display all their arts of fascination. The places so chosen are generally elevations; the turf-enclosure of a disused sheepfold, or some of those beautiful fresh and grassy knowes which tradition loves to associate with the nocturnal pranks of elves and fays. Here, after many battles have been fought and rivals defeated, the gallant full-dressed blackcock perches himself at the break of day; and in localities where the game abounds, the whole of the purple hill-side soon resounds with the humming call. They strut to and fro in their turfy arenas, trailing their wings, inflating their throat and neck, and expanding the plumage of these parts; raising and broadening their shining tails; while the females gradually gather around their lords and masters, with feelings, we may suppose, of respectful admiration. The time of domestic bliss, however, soon passes; the females disperse to seek suitable coverts for depositing their eggs, while the males reassemble in small parties, and retire to the shelter of the brushwood and the bracken in order to complete a new moult; exhibiting a timidity

strangely in contrast with their spring-tide pugnacity and boldness.

Partridges are abundant in the temperate regions of Europe. They are vegetable feeders, living upon seeds, buds, and the succulent parts of herbaceous plants. In their habits they are timorous and retiring; they run with great speed; and their flight, which is quick and of considerable extent, is accompanied by a loud whirring



PARTRIDGE AND BROOD.

sound. They are much esteemed for their flesh, which in all ages and in all civilized countries seems to have pleased the epicurean palate. The partridge is easily alarmed, and the footfall of an intruder startles it from its covert in the brake, when it rises immediately, eagerly flapping its wings, and yearning to escape. But the hen-bird loses her timidity when the safety of her young is at stake. She sits upon her eggs with the greatest assiduity, and

will allow herself to be touched, and even handled, rather than abandon them. This feature in her character has been noticed by the observant poet :—

“ Here, as the swarthy mowers pass
Slow through the tall and russet grass,
In marshalled rank, from side to side,
With circling stroke and measured stride,
Before the scythe's wide-sweeping sway
The russet meadow's tall array
Falls, and the bristly surface strows
With the brown swathe's successive rows.
Ah, take thy heed, nor on her nest
The partridge ill-secured molest !
Deep in the grass behold her sit,
Reluctant from her couch to flit,
Though the stout mower's whistling blade,
Incautious, her abode invade,
And threaten, 'mid the falling heap,
Away herself and brood to sweep.”

When the young are hatched, the affection of the mother is ever vigilant ; and to beguile a stranger from the asylum of her brood she resorts to a well-known stratagem. She throws herself in his way, and, when she has arrested his attention, proceeds to limp along the ground in a direction exactly opposite to that in which her nest is situated ; she trails her wings along the ground as if they were broken ; leaps occasionally, in what seems to be a vain effort to fly ; and desists from her manœuvres only when she knows that her brood are out of danger.

In Western Europe Quails are rather summer visitants than constant residents. They are birds of small size, differing from the partridges in having their heads completely covered with feathers, while their wings are straighter and more acuminate, and the tail smaller.

They are described as polygamous, and the males are partial to the fray. Their habitats are cultivated fields, shrubby commons, and grassy uplands ; where they live on insects, seeds, and the succulent portions of herbaceous plants.

The European or Wandering Quail is generally identified with the quail of Scripture, and in the East occurs in such immense flocks as to explain the circumstance that the Israelites, in their wanderings through the desert, subsisted upon them. Even now, in their proper season, they are so plentiful that the Egyptian fellahs cannot consume those they capture while fresh, but salt them for after-use.

It is a graceful little bird, not much larger than the lark ; in shape, and in the colouring of its plumage, resembling the partridge. Its food consists of grain, the seeds of various plants, and of insects and their larvæ. Its cry is peculiarly shrill and clear, like the notes of a pipe. Its nest is generally placed among wheat, long grass, or thick clover ; it consists of a loose heap of clover stalks, straw, and dry grass, laid in a hollow of the ground. The fowler catches this bird by imitating with what is called a quail-pipe the low note of the female : the male answers with his keen *peevoiree*, and is gradually drawn into the snare. So Bishop Mant sings :—

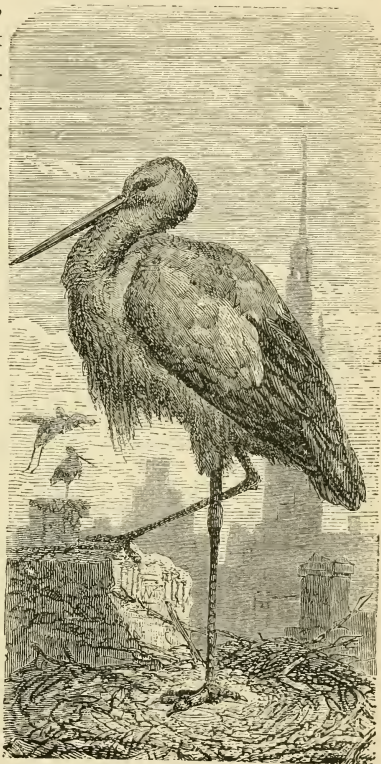
“ Less likely of your aim to fail
If with loud call the whistling quail
Attract you, 'mid the bladed wheat
To spread the skilful snare, and cheat
With mimic sounds his amorous ear,
Intent the female's cry to hear.
For now the vernal warmth invites
From Afric's coasts their northward flights ;
And prompts to skim on nightly breeze
Sicilian or Biscayan seas.”

European Waders are very numerous, as might be expected in a region abounding in pools, marshes, and moist woodlands. Among these we may mention snipes, woodcocks, plovers, and curlews. In several parts of Temperate Europe herons still build their nests in the trees, or wander solitarily by the sides of the sequestered mere. Two species of ibis, as well as several cranes and storks, are European; and in the south-eastern parts a species of flamingo is met with, but it never strays into the western lands. The stork is very plentiful in Holland. Need we describe it? Does not every reader know its quaint peculiar figure, its long and rather thick neck, its ungainly body, its long bill, its slender stilt-like legs, with their comparatively short toes terminating in curved and obtuse claws? All hail to it as one of the most useful of Nature's scavengers! It is an omnivorous bird; a bird with a hearty and indiscriminating appetite; devouring dead animals and any kind of garbage as freely as fishes, frogs, lizards, and the like.

It is curious to observe that from a very early date this useful bird has been held in high esteem. Its Hebrew name signifies "benevolent" or "pious;" and both the Greeks and Romans adopted the stork as their emblem of conjugal devotion, gratitude, and chastity. The ancients cherished some "fond and foolish" ideas respecting its filial affection; how that the young birds, when their parents grew old and unable to feed themselves, brought them food, and tended them with the utmost affection, even taking them on their backs, and indulging them with an occasional aerial journey. Hence the law, ascribed to

Solon's initiative, by which children were bound to support their aged parents, was called the Pelagian or Stork Law.

All naturalists agree, however, that the stork displays an extraordinary amount of philoprogenitiveness ; and, according to Buffon, some instances have been observed, though we admit that Buffon's authority is not impregnable, of birds unable to fly, either through weakness or accidental causes, being fed by their stronger companions. We are not sure that the following anecdote, related by a Dutch writer, can be considered as authentic. In the year 1531, the town of Delft, in Holland, was partly de-



STORK.

stroyed by fire ; and when a female stork, which had been away on a foraging expedition, returned to her nest, she found the house on which it had been built enveloped in flames. At first she exerted all her strength to extricate

her young ones from their perilous position, but they were powerless to fly ; and finding all her efforts useless, she covered them with her body, and thus perished with those she was unable to save.

We may quote another illustration, which occurs in a work of some authority :—On the roof of the cathedral at Colmar had been placed a wheel, laid crosswise, in order to induce the storks to build their nests within it ; a custom obtaining throughout Alsace from a belief of the common people that these birds are harbingers of good fortune. The storks had not failed to come, and one might see the sombre outline of a parent bird occasionally standing out in strong relief against the evening sky, when reddened by the splendours of the setting sun. On one occasion, the brood of young storks was observed to be grouped around their mother, who stood erect upon her great claws. None in the nest slept ; it was evident that all were waiting for an absent one—some straggler, perhaps—and from time to time might be heard their wild and disagreeable cry. At length, on the verge of the horizon, was perceived a stork, with outspread wings, cleaving the air like an arrow, and closely pursued by a bird of prodigious size, apparently a vulture from the neighbouring mountains. The stork was frightened, perhaps wounded, and the cries of those in the nest responded to the parent's cry. The spectators saw the poor terrified bird arrive straight over the nest, and fall there, exhausted either by pain or fatigue. Then the other stork took the place of her companion, and gallantly flew to meet the enemy. Fierce was the combat ; the two adversaries rushed eagerly

upon each other, uttering loud cries. But the fine instinct of maternity was vividly displayed in the stork. While defending herself, or attacking her prodigious foe, she never lost sight of her little ones, that lay trembling and alarmed and anxious in the nest beneath, but endeavoured continually to cover them with her wings. At length, when no longer able to sustain the unequal combat, by a desperate effort she regained her nest, where lay her expiring mate, and the nurslings, as yet too weak for flight. She caught the nest in her bill, shook it forcibly, and overturned it, dashing from the top of the tower the objects of her affection, rather than allow them to fall a prey to her enemy ; then, with heroic self-devotion, she fell upon the wheel, where, with a blow of his cruel beak, the vulture terminated her courageous existence.

The stork is the object of protective legislation in Holland, because it prevents the too rapid increase of frogs and toads in the fens. To the Arabs it is always a welcome visitor ; while the Turks and some of the Eastern peoples regard it as a sacred bird, which it is forbidden to kill. At Constantinople, at Cairo, and other Eastern cities, it builds in the streets, and mingles familiarly and fearlessly with the inhabitants.

Their annual migrations are a remarkable event in their history. They quit the temperate countries of Europe in the autumn, but prior to their departure assemble in large flocks, as if for the purpose of mutual consultation and deliberation ; and at this time they are very noisy, continuously giving utterance to a singular clattering sound, not unlike that of castanets, and due to the violent strik-

ing together of the two jaws. The immense number of the birds which thus perform their annual migration may be imagined from a fact related by Dr. Shaw, that he saw three flights of them leaving Egypt and passing over Mount Carmel, each of which was half a mile in breadth. How these birds are able year after year to determine so exactly the period of their departure, which never varies above a day or two, and how they guide themselves through the air for leagues upon leagues, never failing to reach their chosen destination, and returning regularly to the same localities, even to the same nests, are problems which science must confess to be insolvable. We can but say with the prophet, "The stork knoweth her appointed time,"—and not only her appointed time, but her appointed place.

In some parts of Europe the stork, like the swallow in England, is regarded as the sure harbinger of Spring; and the Hungarian children, on the banks and islands of the Danube, welcome the arrival of the well-known visitors with a kind of carol,—which is curious, we may point out, from its evidence of the traditional and historical hatred of the Hungarian for the Moslem,—

"Stork! stork! poor stork!
Why is thy foot so bloody?
A Turkish boy hath torn it:
Hungarian boy will heal it
With fiddle, fife, and drum."

The poets are close and accurate observers, and we need not be surprised that they have been induced to describe and celebrate movements so remarkable and significant as

the annual hegira of the storks. In a well-known passage Thomson elaborately details the preparations of the birds for their long aerial expedition, and the circumstances of their departure. He says :—

“ Where the Rhine loses its majestic force
In Belgian plains, won from the raging deep
By diligence amazing, and the strong
Unconquerable hand of liberty,
The stork assembly meet; for many a day
Consulting deep and various, ere they take
Their arduous voyage through the liquid sky.
And now their route designed, their leaders chose,
Their tribes adjusted, cleaned their vigorous wings;
And many a circle, many a short essay,
Wheeled round and round in congregation full,
The figured flight ascends, and riding high,
The aerial billow mixes with the clouds.”

We shall now notice more briefly a few other genera of game and water-birds which belong to Temperate Europe.

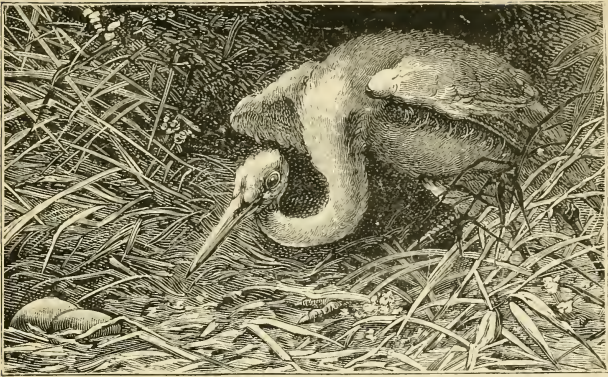
Most country dwellers, or summer visitors to the country, in their wanderings over meadow and cornfield will have heard the peculiar cry of the Corn-crake, which resembles the syllables *crek, crek*, repeated at short intervals, and continued for fifteen to twenty minutes.

This shy and little seen though often heard summer-guest,—it arrives in April, and leaves in September,—is reputed to be an expert ventriloquist, and, as Macgillivray says, whether or not it deserves the reputation, those who hear its cry are very apt to be mistaken as to its actual position; for, at one time loud, at another low, it now seems to indicate a close proximity, now a considerable remoteness, and even appears to come from various directions. When uttering its cry, the bird usually stands still, with its neck considerably drawn in.

Although, says Macgillivray, not gaudily attired, the corn-crake is richly coloured, and, when observed in its wild haunts, has an appearance of great elegance. It moves in a graceful manner, and when proceeding leisurely walks with what might be called sedateness, lifting its feet rather high, jerking up its short tail, and bending its neck backwards and forwards at every step, like the water-hen. Alarmed, either while walking or uttering its cry, it instantly ceases, stands still or crouches, and, if it judges it expedient, starts off, throwing its neck out and its body forward. It is not gregarious at any period of its residence with us, although, in favourable localities—such as ample meadows—many individuals may sometimes be found not far from one another. Its food consists of worms, snails, beetles, and other insects.

Among the migratory birds which visit Temperate Europe every year, the Crane holds a foremost place. It is a sober-coloured bird, whose plumage is chiefly of an ashen-gray tint; the crown of the head is red and bare, and a dull white stripe slants from each eye down the side of the neck. It generally arrives in Holland and Germany about the end of spring; flying high, and in wedge-shaped flocks, like the Macedonian phalanx. It builds a rude nest in the most secluded marshy places; and the female lays a couple of greenish gray eggs, spotted with brown.

Sir J. Richardson well observes, that the migration and periodical flight of the crane and other birds, though instigated and controlled by innate intelligence, must yet be regarded as peculiarly demonstrative of the Creator's



CRANE AND NEST.

providential superintendence. Of this assertion the truth is vividly shown in the natural history of the crane. Sir J. Richardson records how on one occasion he was surprised and delighted with a flight of birds, which at first appeared no more than a thick dark speck in the heavens, gradually enlarging as it approached, and finally revealing all the array and order of their flight. They wheeled airily along in the form of a semicircle, which enclosed within itself numerous smaller circles; of these, the component parts were continually shifting their relative positions, now pushing forward to the front, as if in obedience to a sudden impulse, now falling back to the rear, alternately replacing and giving way to others. This friendly rivalry was constantly maintained; each bird every instant passing or being passed by his fellow. Yet in all these incessant motions grace and harmony prevailed; not a discordant movement was visible throughout the entire array;

everything seemed to have been regulated by a preconcerted plan, in which every member understood and went through his part with equal accuracy and freedom. From north to south they held on their steady flight, even as Milton has described the order of their going,—

“ In common, ranged in figure, wedge their way,
Intelligent of seasons, and set forth
Their airy caravans, high over seas
Flying, and over lands, with mutual wing
Easing their flight.”

A very rare bird in England, and now-a-days not very common in any part of Temperate Europe, is the Bustard ; which, in the naturalist's classification, occupies an intermediate position between the plover and the partridge, and in some respects may be regarded as the European representative of the Ostrich family. Unlike the cassowary or the ostrich, it is provided with large wings ; but it makes very little use of them, generally running along the ground, and only rising into the air on exceptional occasions. When once on the wing, however, its flight is strong and easily sustained. It feeds on vegetable matter, worms, and insects ; has a long neck and longer legs ; measures about two feet six inches in length, and weighs about twenty pounds.

We close our notices of the European Birds which figure so agreeably in our landscapes, in dale and upland, in pasture and cornfield, in marsh and wood, with some parting words on the Bittern and the Heron, to which our previous allusions have been brief and imperfect.

The bittern and the heron we class together, because both are long-legged, sedate, and stalking birds ; waders, which advance far into the water, and patiently stand, as if petrified, waiting for their prey.

The male bittern is well known by his peculiar booming cry, which at night rings out across the fens with a most melancholy sound.

His nest, of reeds, twigs, and grass, is built on the ground, in the shelter of the thickest herbage, and close



BITTERN.

to the water's brink. Here the female deposits four or five eggs of a light brown colour, and almost perfect oval shape.

Owing to his solitary habits, and his aversion to the neighbourhood of man, the bittern is put forward in Scripture as the bird of desolation. When attacked, his self-defence is very vigorous ; and as he resists to

the last, he frequently inflicts severe wounds on an aggressor.

In lonely fenny districts the bittern is still to be met with. It is sunset, let us suppose, and you are wending your way across some dreary moor, or in the neighbourhood of some sequestered marsh. You hear the rustle of the reeds as the night-wind rises; but above their low *susurrus* you are conscious of a shorter, sharper rustle, with a rushing sound like the sweep of a powerful wing. You survey the horizon, but no bird is visible. Then comes another rustle of the wing, and another, and yet another; but still you see nothing. It is eerie, you feel, and uncanny, and perhaps your heart, in spite of yourself, quickens its beat, and a sense of being haunted grows upon you. Onward you stride, and your speed is certainly increased, when all at once a burst of wild, strange laughter rings in your ears, and is carried by the wind to many an echo; a curious medley of sound, like the neigh of a horse and the bellow of a bull combined, but somewhat subdued.

A moment's reflection tells you that you are listening to the love-call of the bittern; and harsh and strange as it seems, you discover, on further hearing, that it is not without a kind of cadence or modulation. While uttering it, the bird performs a spiral ascending flight; expanding his voice as the curves widen, and lowering it as they contract; timing his movements, as it were, to his song. In his style of flying, as Mudie says, there is something which is as fine as it is peculiar. To observe it thoroughly, the spectator should lie prone on his back; and in that

position, too, he will hear the song more distinctly. There is an echo, and, you could almost swear, a shaking of the ground ; not that, as Thomson pretends,

“The bittern knows his time, with bill engulfed,
To shake the sounding marsh ;”

but that when the bird is “booming and bleating” overhead, it does seem as if the earth trembled : though this, probably, is nothing more than “the general affection of the sentimental system by the jarring upon the ear—an affection which we more or less feel in the case of all harsh and grating sounds, more especially when they are new to us.”

Passing to the herons, the Common or Gray Heron, with its large head and long bill, its curved thick neck, its high and almost hunched back, its short tail, and its long legs set so far back in the body that one wonders how it can preserve its equilibrium, presents a sufficiently striking if not very graceful appearance.

It is a melancholy and lonely bird, living a veritable hermit life in the silent fens and marshes, except during the breeding season, when it seeks the company of its congeners ; and they form one of those large communities called “heronries,” which in the old time were so carefully protected for the sake of the amusement they afforded king, knight, and noble, in the all-engrossing pursuit of hawking.

A graphic description of the habits of this feathered anchorite is given by Cuvier. It everywhere seeks, as he

says, the neighbourhood of lakes, rivers, and water-courses. Almost always alone, it remains, for hours together, immovable in the same spot. When it sets itself in motion to watch the frogs and fishes which constitute its principal food, it enters into the water above the knee, with its head between its legs; and in this position, after patiently watching for an opportunity to seize its prey, suddenly unwinds its long neck, and pierces its victim with its bill. It is known to swallow frogs entire, for their bones have



HERONS.

been found unbroken in its stomach. In seasons of scarcity, and when the water is covered with the ice-crust of winter, it seeks the running streams and hot-springs, where it will feed on the water-lentil and other small plants.

The heron builds in the taller trees of the wood, in lofty oaks and stately firs, congregating in great numbers, and frequenting the same locality and the same trees year

after year. At Parham the herons assemble early in February, and then set about repairing their nests; but the trees are never entirely deserted during the winter months, a few birds—probably some of the more backward of the preceding season—roosting among their boughs every night. They commence laying early in March; and from the time the young birds are hatched until late in the summer, the parent herons forage for them day and night. A curious history attaches to this Parham heronry. The ancestral birds were brought, in the reign of James I., from Coitg Castle, in Wales, to Penshurst. They abode in the demesne of the Sidneys for upwards of two hundred years, and then migrated to Michel Grove, in the neighbourhood of Arundel. About twenty-five years ago a couple of trees, for some reason or other, were felled in the heronry; whereupon the offended or affrighted birds at once commenced their migrations, and in three seasons had all found their way to Parham woods. There is also a heronry—or was—at Cressy Hall, near Spalding, in Lincolnshire. Sometimes they build on the sea-cliff, or on rocks near the coast, out generally in secluded inland groves, among the boughs of the spruce-fir and the pine.

A remarkable characteristic in the habits of the heron remains to be noticed. When a river has inundated the marshes and plains in its neighbourhood, and the waters have subsided, leaving here and there a few pools with fish in them—the said fish having returned with the rolling flood—the heron may be observed to fish in sun and shade indiscriminately. Otherwise, as if the bird were

conscious of the alarm which fishes feel at any shadow, it is careful never to hunt for prey except in the absence of the sun. But in the pools we have described the water is so muddy that no shadow can be reflected by it ; and the fish, moreover, have no possible means of escape. As if aware of these facts, the heron does not hesitate to fish in them even in the full glow of the sunlight,—an interesting illustration of its innate and pre-ordained intelligence.

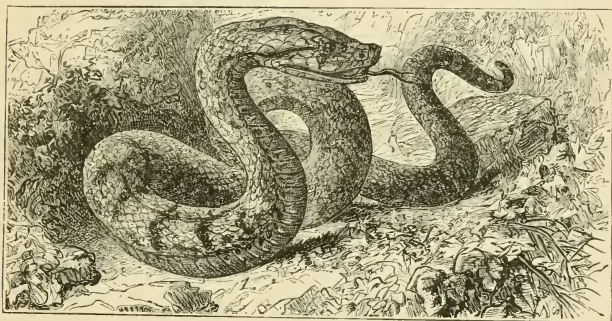
REPTILE LIFE IN TEMPERATE EUROPE.

It is almost needless to say that the Amphibia are well represented in Europe. Frogs and toads abound in all marshy places ; but they do not attain to the dimensions of the North American bull-frog or the hideous pipa of Brazil and Surinam. Great Britain has only two species of frogs and the same number of toads—the Common Toad and the Natter-Jack. Of the tree-frogs there is one European species—the *Hyla arborea*—whose webbed feet are provided with little cushions at the points of the toes, forming a kind of sucker, by means of which they can force out the air from under their feet, and, aided by the atmospheric pressure, adhere to the under surface of the smoothest leaf, in the same way as a fly clings to the ceiling of a room. To Europe also belongs the Eatable Frog, which is employed as an article of diet in some parts of France.

Coming to the Chelonians, we find that the land tortoises are by no means uncommon in Europe. In all the countries of the Mediterranean basin is found the Common Tortoise—*Testudo Græca*—which measures about a foot in

length, lives on vegetables and insects, and burrows in the ground during the winter season. Of the Turtles, the species known as the Coriaceous—which attains a large size—inhabits the Mediterranean; and the Loggerhead visits the warmer parts of the Atlantic, occasionally straying into our British seas.

Serpents are distributed over all the hot and temperate regions of the world, though most numerous, as well as most venomous, in inter-tropical countries. Europe, how-



COMMON VIPER.

ever, is happily free from the more dangerous species. It is the Viper that ventures further north than any other of the hateful tribe, three species being European. The Common Viper inhabits Europe and Temperate Asia, even to Lake Baikal, in the Altaï Mountains; it is not unknown in England, and is common in the Highlands of Scotland, but penetrates no further westward than the Seine, nor does it pass the Alps.

Nine or ten species of innocuous serpents are European,

of which the Common Ringed Snake of England and the Æsculapian Snake of Italy—chosen emblem of the medical profession—are the most familiar examples.

The Crocodilia are not represented, but Europe is rich in attractive species of the Lacertilia, or lizards. Most of these abound in the sunny southern lands—in Spain, and Greece, and Italy; but they are not uncommon in Western Europe, and a few individuals are found in England. Having already directed the reader's attention to their habits and characteristics, it is unnecessary for us to do more in this place than state that fully sixty-three species, if not more, are European.

CHAPTER VIII.

ANIMAL LIFE IN TEMPERATE SEAS.



EARLY two-thirds of the entire surface of the globe lies under water, and probably a similar proportion of this world of waters is included within the Temperate Zones. This vast region is literally teeming with life, not only along the shores, to which it was formerly supposed to be mostly confined, but over its entire area, and almost literally from top to bottom; no account, therefore, of the animals of Temperate Regions would be complete which did not refer to some of the more interesting forms of marine life, especially as during the past few years more has been discovered regarding the ocean and its inhabitants than in all past ages put together. The "dark, unfathomed caves of ocean," on which poets formerly delighted to descant, can hardly be said any longer to exist, now that the dredge has explored their inmost recesses, and brought up in its meshes a world of living wonders for the study of the naturalist. The laying of submarine telegraph cables first drew the attention of scientific men to the nature of the sea bottom; and one expedition after another has gone from this and other countries, sounding and dredging in every sea, until now

we are as well acquainted with the contour of large tracts of the sea bottom as we are with many parts of the surface of the dry land. The ocean bed is now known to be no flat table-land, like the surface of the water which rests upon it; but to be diversified with plains and valleys, peaks and mountain-chains. Thus, in the Atlantic Ocean, there is a submerged mountain-chain, rising 15,000 feet above the surrounding depths; and some of the oceanic islands, as St. Paul's Rocks, Ascension, and St. Helena, which rise abruptly out of the water, are merely the peaks of lofty mountains whose foundations are several miles beneath the surface of the waves. Not many years ago it was the universal belief that no living animal could exist beyond a depth of a few hundred fathoms; the ocean at greater depths being supposed to be as destitute of life as the highest mountain-peaks or the sandiest deserts. Deep-sea dredging has, however, shown that life can and does exist at all depths, in greater or less abundance; the denizens of this *great* deep having undergone modification in order to suit them for living under such peculiar conditions. Thus there is a shark-fishery carried on in Setubal Bay, off the coast of Portugal, where the sharks are often brought up on the lines from a depth of 3000 feet; but it is found that on reaching the surface they are invariably dead, owing, no doubt, to the removal of the enormous pressure of water under which they are accustomed to live, and without which they can no longer exist.

A wonderful instrument is the dredge, to which we owe so much information on these matters; and the sinking and raising of it in deep seas is by no means the simple

and expeditious operation which many may suppose. Thus, on one occasion, when Sir W. Thomson and his staff were dredging in the Bay of Biscay, this instrument was lowered into the water at 4.40 P.M., and before it had reached the bottom—a depth of three and a half miles—two hours had elapsed. The hauling-in commenced at 8.50 P.M., and it was not till one in the morning—that is, eight hours after it had been cast overboard—that it was safely landed on deck, bringing with it a hundredweight and a half of the characteristic mud of the Atlantic. And now for the

ANIMAL LIFE IN THE TEMPERATE SEAS.

These seas are in an especial manner the home of the food fishes: shoals of herring appear and disappear on their coasts; their sandbanks are alive with myriads of cod, haddock, and ling; and the estuaries of the rivers which run into them abound in salmon, trout, and eels. Besides those species highly valuable as human food, there are others, as the devil-fish, the sun-fish, the remora, sea-scorpions, and sticklebacks, which are interesting either from their peculiar forms or their no less remarkable habits. Of the food fishes space will only permit us to notice the Cod. This is one of the most voracious of fish, and the fisherman need not be particular as to the kind of bait with which he seeks to catch it. The contents of the stomach of a well-fed cod form a small museum of marine animals,—small fish, crustaceans, shell-fish, and worms. Mr. Couch has taken no fewer than thirty-five crabs from the stomach of a single one of those gourmands. No wonder that they often attain a weight exceeding sixty pounds.

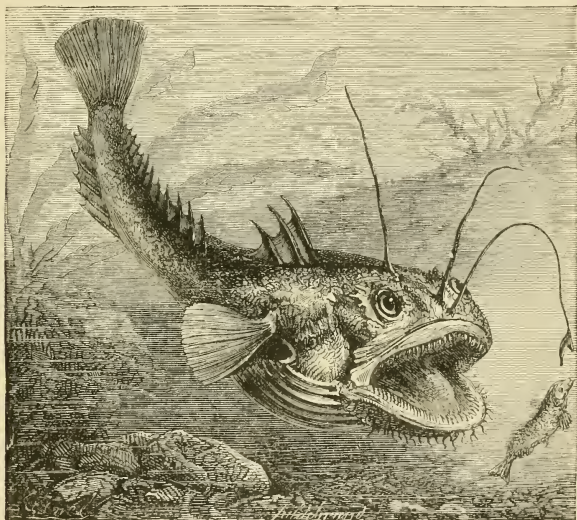
The largest cod-fishery in the world is that prosecuted on the great bank off Newfoundland, where, in 1874, the Canadian fishermen alone took 34,000 tons of them. Their livers are boiled down in order to obtain the famous cod-liver oil. At Port Logan, in Wigtownshire, there is a salt-water basin scooped out of the solid rock, and having at high-water a connection, by means of a narrow fissure, with the outside ocean, in which cod are confined. A fisherman has charge of this preserve, who supplies them regularly with food, which consists of boiled whelks, limpets, and other shell-fish. "And no sooner," says Yarrell, "does the keeper or his son appear with the well-known basket of prepared food, than a hundred mouths are simultaneously opened to greet his arrival." So tame are they that they do not hesitate to approach the side and take food from the hand. The cod is also one of the most prolific of fish, the female at the breeding season having been known to contain 8,000,000 eggs. These are called *roe*, and great quantities of them are eaten by other fishes. They are also used on the French coast as bait in the sardine fishery, and large quantities are prepared in France for human food. Were it not for such wholesale destruction of their eggs, there would be some danger of the sea becoming a living mass of cod.

The Devil-fish owes its name to its hideous aspect, which somewhat resembles a huge tadpole—all head and tail; hence it is also known as the fishing-frog. It sometimes attains a length of five feet, and is a sluggish fish, spending most of its time resting on the muddy bottom of the sea,



COD-FISHING OFF NEWFOUNDLAND.

and totally unable to obtain its food, which consists principally of fish much more active than itself, by the usual method of pursuit. It has recourse, therefore, to stratagem, in which it makes use of a curious apparatus on the upper surface of its head. This consists of three slender filaments or rods, provided at their extremities with a flattened por-



DEVIL-FISH, OR ANGLER.

tion, which, as it dangles about, shines like a piece of tinsel. The wily fish, having almost buried itself for concealment in its muddy bed, lies perfectly still, while it waves aloft its fishing-rods with their glittering bait. Enticed by these, the smaller fish draw near to have a nibble, when, coming within range of its capacious jaws, they are at once engulfed.

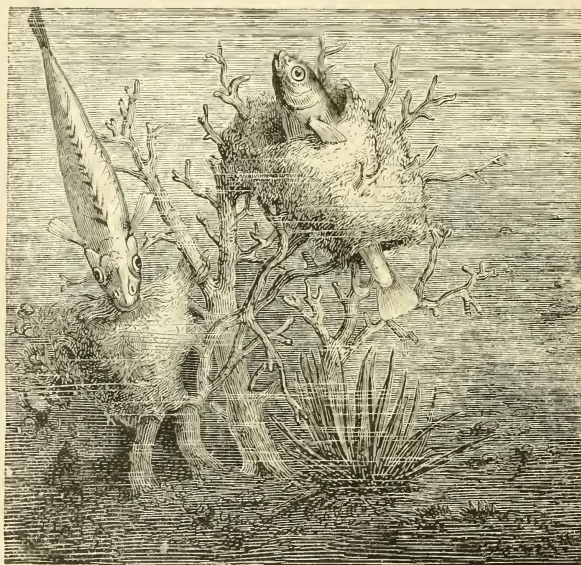
There is no more rapacious fish in the temperate seas than the Angler, as this curious creature is also called. The work of digestion, however, goes on but slowly in this species; and although worthless in itself, it is often caught by the fishermen for the sake of the undigested contents of its stomach. Over fifty herrings have thus been taken from the stomach of a single angler, and these sufficiently fresh to be sold in the market. When caught in the net, it is said to busy itself, not in attempting to find a way of escape, but in devouring as many of its fellow-prisoners as it can. When all its arts fail to secure for it sufficient food at the bottom, it comes to the surface in search of prey, where it has been known to capture and attempt to swallow such large birds as the herring-gull and the northern diver; such instances as are known being those in which it failed to accomplish this, and only succeeded in choking itself, both bird and fish being found floating dead on the surface.

Until lately, no fish was known to possess any defensive weapons corresponding to the poison-fangs of serpents; recently, however, a fish belonging to the group known as the "batrachoid," or frog-like, has been discovered, having a very perfect organ for inflicting wounds, and for conveying its poison into them. There are also many other fish which possess in their spines very formidable weapons of offence. Chief among these are the Weevers, known also as Sea-scorpions and Sea-spiders. They hide themselves among sand and gravel, which they closely resemble in the pepper-and-salt colour of their skin; and here they

are sometimes left dry by the receding tide, being able to exist among the wet sand until the return of the waters. Should the incautious sea-shore naturalist, observing something fish-like half buried at his feet, touch even the tip of its tail, the formidable spine situated on the neck of this creature will be directed, with the utmost rapidity and precision, to the object touching it, and a severe wound inflicted. "On one occasion," says a recent writer, "when a fisherman had laid hold of a weever, which he had taken on a line, the sudden plunge of the piercing instrument instantly compelled him to drop his prize; and when, ignorant of the danger, it was grasped successively by two other persons, so great was the agony felt by all of them that they were compelled to leave their fishing and proceed to land in order to procure relief." Even when the fish is dead it requires careful handling; and so in some places in the south of England, where weevers are plentiful, they are not allowed to be brought into the markets for sale until deprived of their spines.

Spines only less formidable than these, because they are much smaller, are found in all the members of the Stickleback family. This family contains the smallest, and at the same time the most pugnacious, of all the finny tribes; and in this respect they offer a striking analogy to those tiniest and most combative of the feathered tribes, the humming-birds; and, like the latter, they often direct their fury against one another. A writer in Loudon's Magazine thus describes one of these fights:—"Having been put into a tub, the sticklebacks," he says, "swim

about in a shoal, apparently exploring their new habitation. Suddenly one will take possession of the tub, or, as it will sometimes happen, the bottom, and will instantly commence an attack upon his companions ; and if any of them venture to oppose his sway, a regular and most furious battle ensues : they swim round and round with the greatest rapidity, biting and endeavouring to pierce each other

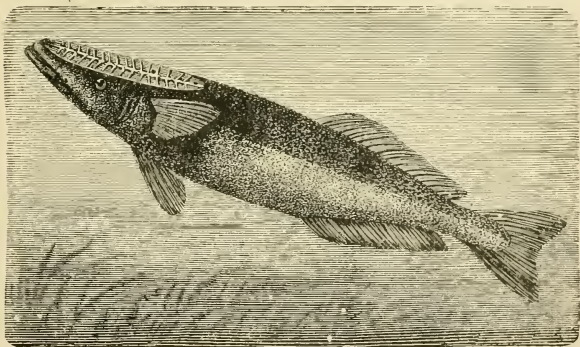


STICKLEBACKS AND NESTS.

with their lateral spines, which on these occasions are projected. I have witnessed a battle of this sort, which lasted several minutes before either would give way ; and when one does submit, imagination can hardly conceive

the vindictive fury of the conqueror." With their spines the males—for it is only the stronger sex that is pugnacious—often rip one another up in their fierce encounters. Sticklebacks have, however, a more pleasing interest, in the fact that they are among the very few fish which build nests—very rude structures as compared with the exquisite homes of many birds, but still very wonderful when we take into account the element in which they work. After the eggs are deposited in the nest, the male guards them until they are hatched; and he it is who likewise looks after the young until they are able to cater for themselves.

The Remora, or Sucking-fish, is worth a passing notice,



REMORA.

from the peculiar means it adopts in order to make its way through the sea. It is a feeble fish, incapable of long-continued exertion; yet it is widespread, and thus seems to fare better than many more active species. It succeeds

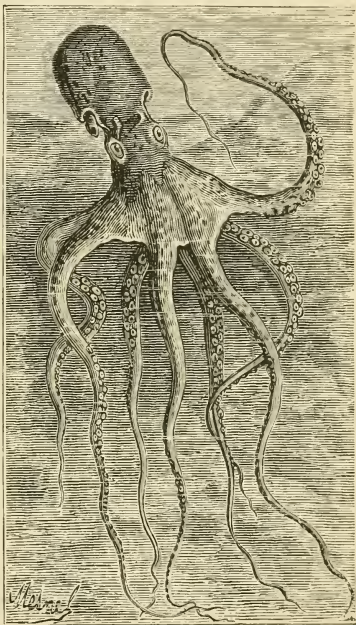
through the faculty it possesses of attaching itself to its larger and more powerful neighbours. This it does by means of a flat sucker on the crown of its head, which it applies, much as a boy does his leather toy, to the skin of whale or shark, and often to the sides of ships—probably mistaking the latter for some huge leviathan of the deep ; and in this way it is conveyed over distances which it would be impossible for it to accomplish with its feeble fins. When a shark is caught at sea, and hauled out of the water, the sucking-fish, which are almost always dotted over it, drop off and attach themselves to the sides of the ship. It was this habit that made the remora so famous among the Greeks and Romans, and caused them to invent the most absurd stories regarding its occult powers. Thus it was popularly believed to have the power when attached to any moving object, even to the largest ship, of stopping its course, and thus anchoring it firmly even in mid-ocean.

The curious Sun-fish, which looks as if the lower half of its body had been cut off, owes its name to the shining appearance it presents as it floats, apparently asleep, on the surface of the water, with its side uppermost.

Temperate seas abound in calamaries, squids, and poulpes, all included under the name of Cuttle-fishes. These are soft-bodied molluscs, with eight or ten long arms round the head, each arm covered, more or less, with suckers, by which they hold their prey in a deadly embrace. The arms surround the mouth, which is provided with a horny beak, bearing a striking resemblance to the beak of a

parrot. They move rapidly through the water, not by means of limbs or fins, but by the expulsion of a jet of water through a funnel-like tube, which drives them in the contrary direction. When threatened with danger, they have a curious means of defending themselves in their ink-

sac. This contains an inky secretion, which the creature pours out when pursued: the water all about becomes dark, rendering the cuttle-fish invisible to its enemy, who thus makes his escape under a cloud. From early times accounts have been handed down of huge cuttle-fishes — monsters large enough to grasp, and drag under the water, whole ships with their crews. Until lately, these stories were classed with such absurdities as that of the remora ar-



CUTTLE-FISH.

resting the progress of ships. A few years ago, however, one of these very monsters was encountered by two fishermen off the coast of Newfoundland; and probably their story would have been discredited, as are the ever-recurring stories of the appearance of the sea-serpent,

had they not brought back with them two of the giant's arms as trophies of their encounter. The following is taken from the account sent to this country by the Rev. Mr. Harvey, to whom the fishermen narrated their adventure :—"When plying their vocation, they descried, at a short distance from them, a dark shapeless mass floating in the water. Concluding that it was a bale of goods, possibly a portion of the cargo of some wrecked vessel, the men rowed up to it, anticipating a valuable prize, and one of them struck the object with his boat-hook. In an instant the dark mass became animated, and opening out like a huge umbrella, displayed to view a pair of prominent, ghastly green eyes of enormous size, which glared at them with apparent ferocity, its huge, parrot-like beak at the same time opening in a savage and threatening manner. The men were so terrified by the terrible apparition, that for a moment they were unable to stir ; and before they could recover their presence of mind sufficiently to endeavour to make their escape, the monster, now but a few feet from the boat, shot out from around it several long arms of corpse-like fleshiness, and grappling for the boat, sought to envelop it in their livid folds. Two of these reached the craft, and in consequence of its greater length, one went completely over and beyond it. At this moment one of the men fortunately recovered from his fright, and seizing a hatchet that happened to be on board, succeeded by a desperate effort in severing both these arms. On finding itself wounded, the animal moved off backwards, at the same time darkening the water with its inky emissions ; and presently became lost to sight beneath the

surface of the waves." The portion of the longer arm thus secured measured nineteen feet in length, and had no less than one hundred and eighty suckers on it, many of these an inch and a quarter in diameter. The entire arm would probably be double the length of this portion, or about forty feet. Shortly after, another of these giant cuttles was caught in a fishing-net and safely landed. Although a smaller specimen than the former, its longest arm measured twenty-four feet, and its body was eight feet in length, and five in girth.

Crabs and lobsters are universally distributed over the seas of the Temperate Zone, many of them being esteemed as articles of food, and correspondingly sought after. They are usually caught in traps of wicker-work, baited with all sorts of garbage; for crabs are the scavengers of the sea. The Great Crab is sometimes caught in the quiet bays of the west of Scotland in a very primitive way. The fisherman, looking over the side of the boat, sees the crab as he moves sideways along the quiet sea-bottom, and pokes it from behind with a long pole kept for the purpose. This the irritable crustacean angrily seizes with his great pincers, and is the more confirmed in his determination to hold by it the more the fisherman shakes the pole as if to get rid of it. In this way, by taking advantage of its bad temper and obstinacy, the creature is gradually raised, and at last hoisted into the boat.

There is probably no other group of animals in which the species differ so much in size. Thus the Pea Crab, which seeks shelter within the shells of the cockle, mussel,

and other bivalves, is no bigger than its name implies; while in Japanese waters there occurs a giant crab,—*Inachus Kempferi* by name,—which measures ten feet from tip to tip of its pincer claws.

The Hermit Crab, in one or other of its species, is found in every sea. Unlike his congeners, he wears no complete coat of-



HERMIT CRAB.

mail, no calcareous shell covering his whole body, but only a cuirass and head-piece: the rest of his body is exposed; and to protect it, his instinct bids him seek the shelter of some empty shell, of a suitable shape and size. In search of such an one he may be seen prowling about the beach; and if he fails to find what he wants, he frequently attacks an

inoffensive testacean, kills it, and immediately takes possession of its dwelling-place. There, like a hermit, he lives his solitary life, until, growing too large for his borrowed habitation, he sallies forth in quest of one more suitable.

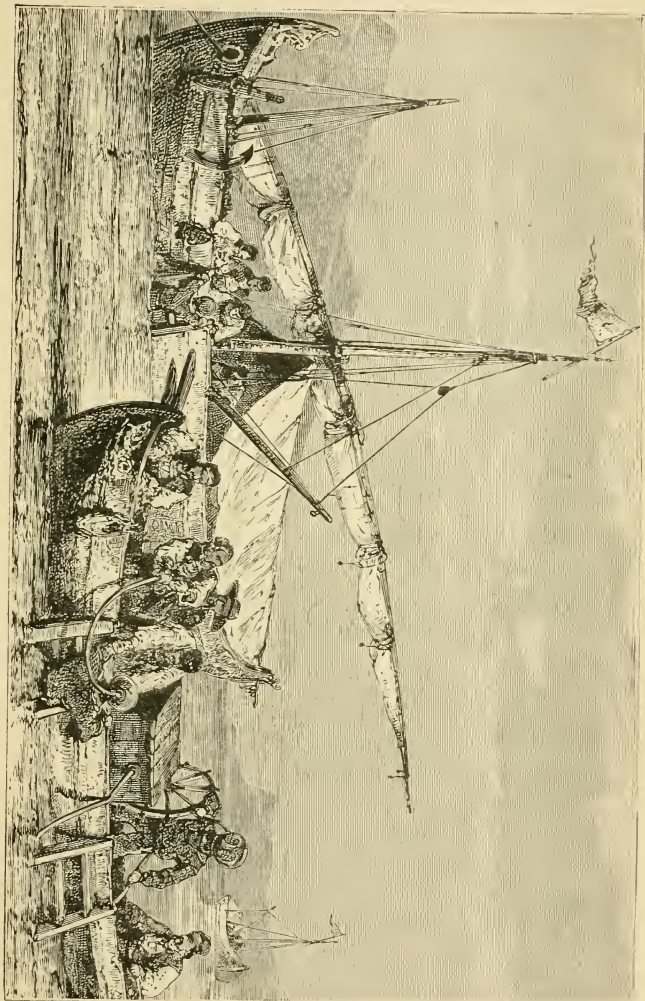
The hermit is very timid,—the effect, perhaps, of a bad conscience!—and at the slightest alarm withdraws into his shell, tucking in his smaller claws, and closing the entrance with his larger. So firmly does he cling to the bottom of his abode, that you may pull it to pieces and yet not remove its inhabitant entire: his tail acts as a kind of sucker, by means of which he adheres to the walls of his retreat. His strength is great; so is his voracity, and he not only preys upon the annelids and fragments of dead fishes and molluscs that encumber the shore, but upon living animals. He is also extremely pugnacious; and never meets one of his own kind without crossing swords. The writer has often watched an encounter between two hermit crabs, and been much amused by its grotesque aspect; for though quarrelsome they are cowardly, and each feels about the other with his long pincers as if eager yet afraid to strike. Sometimes they come to blows, and tumble one over the other, and roll to and fro, and hook together their claws, and create much ado about nothing, for the battle usually ends in the pacific retreat of both combatants; but frequently they seem to be satisfied with each other's equal strength and address, and depart without coming into actual collision.

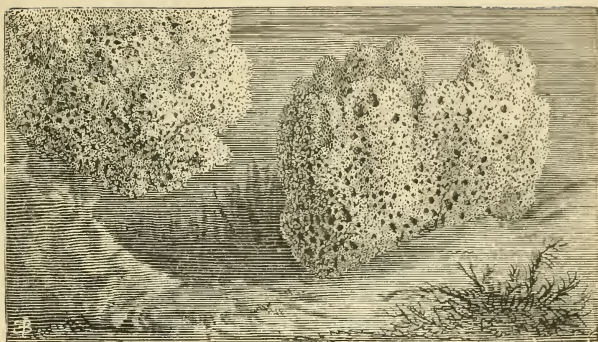
Although corals are almost unknown in temperate seas, Sponges—another group of plant-like animals—exist in

comparative abundance. What is commonly known as sponge is merely the framework on which the living part is supported. The horny fibres of which this framework is composed are so interlaced as to form numerous canals, which permeate the sponge in every direction, and open on the surface in numerous small apertures, with here and there a larger one. These two kinds of openings, with which every one who has handled a bit of common sponge is familiar, serve totally different purposes. If you examine a bit of living sponge placed in a glass full of salt water, the fluid will be seen to enter by the smaller openings, and to pass out by the larger ones. In the interval the water has passed over the sponge animalcules, and by them has been deprived of its nutritive ingredients. A living sponge may thus be fitly described as a large and populous city, all honeycombed over with innumerable streets and lanes, whose inhabitants ever sit, like Eastern shopkeepers, out of doors, and make their living by picking up whatever treasure fortune may put in their way.

The sponges of commerce are of two kinds,—Turkish and West Indian. The former are principally obtained from the shores of the Grecian islands, Cyprus, Crete, and the Levant, where the sponge-fisheries take the place of the coral-fisheries of the Italian coast. They are obtained by diving; an art in which the inhabitants of these regions are trained from their earliest years, and proficiency in which is regarded as essential in any youth wishing to become a husband. Pomet says that in the island of Icarus “the young men are not allowed to marry till they can show that they can gather sponges from the bottom of the sea; and for this

SPONGE-FISHING OFF THE COAST OF GREECE.



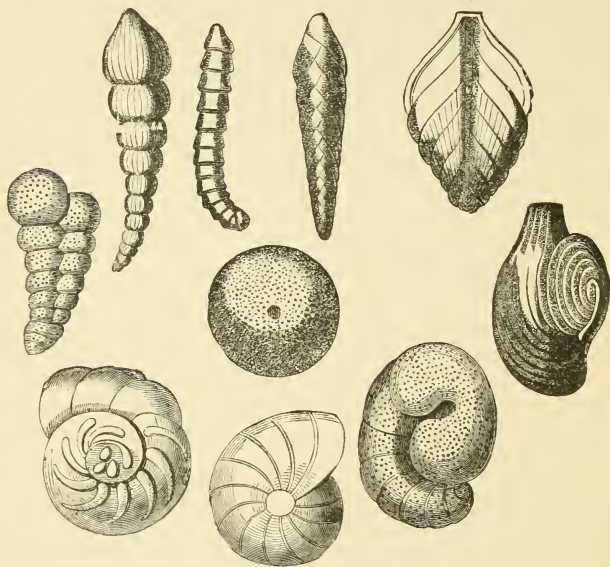


SPONGE.

reason, when any one would marry his daughter, a number of young fellows are stripped, and jump into the sea, and he that can stay longest in the water, and gather the most sponges, marries the maid." The diver, on reaching the growing sponges, tears them off with his hands, and puts them under his arm; he then pulls a cord in connection with the boat at the surface, and is drawn up by his companions. By long practice the best divers are able to remain about two minutes under water.

The surface waters of temperate seas abound in minute, microscopic creatures known as Foraminifera, which live in shells of the most beautiful and varied forms, and composed principally of lime. Although almost invisible to the naked eye, these tiniest of creatures have played, and are still playing, an important part in the economy of nature. They live in countless myriads on the surface of the ocean; and as they die, their habitations—those little calcareous

shells—gradually sink to the bottom, where they form a fine grayish mud, which has been found to be spread over wide areas in the bed of the Atlantic. To know what this fine mud will, in all probability, one day become, we have only to go to the south of England, and there, beneath the



FORAMINIFERA.

surface of the soil, the solid rock over a wide area is seen to consist of pure chalk. Reduce a small piece of this to powder, mix it with water, and then look at it with a strongly magnifying glass; it will then be seen to consist entirely of the minute shells of foraminifera,—in other words, to be identical with the whitish mud that is now

accumulating slowly but surely at the bottom of so many seas. Should those ocean beds ever be elevated so as to form dry land, their surface rocks will consist of chalk similar to that forming the famous cliffs of Dover. Insignificant as these creatures are, they are thus contributing, and that in no small degree, to the building up of future continents,—the homes, it may be, of different though not altogether dissimilar animals to those we have just been describing as at present in possession of

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